XR-6440RDS

SERVICE MANUAL

AEP Model
UK Model

Model Name Using Similar Mechanism	XR-C510RDS
Tape Transport Mechanism Type	MG-50EX-39

SPECIFICATIONS

Cassette player section

Tape track	4-track 2-channel stereo
Wow and flutter	0.08 % (WRMS)
Frequency response	30 – 15,000 Hz
Signal-to- noise ratio	55 dB

Tuner section

FM

Tuning range	87.5 – 108.0 MHz
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	8 dBf
Selectivity	75 dB at 400 kHz
Signal-to-noise ratio	65 dB (stereo), 68 dB (mono)
Harmonic distortion at 1 kHz	0.5 % (stereo), 0.3 % (mono)
Separation	35 dB at 1 kHz
Frequency response	30 – 15,000 Hz
Capture ratio	2 dB

MW/LW

Tuning range	MW: 531 – 1,602 kHz LW: 153 – 281 kHz
Antenna terminal	External antenna connector
Intermediate frequency	10.71 MHz/450 kHz
Sensitivity	MW: 30 µV LW: 50 µV

Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 – 8 ohms
Maximum power output	15 W × 4 (at 4 ohms)

General

Output lead	Power antenna relay control lead
Tone controls	Bass ±8 dB at 100 Hz Treble ±8 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 188 × 58 × 176 mm (w/h/d)
Mounting dimension	Approx. 182 × 53 × 155 mm (w/h/d)
Mass	Approx. 1.2 kg
Supplied accessories	Power connecting cord (1) Mounting hardware (1 set) Front panel case (1)

Design and specifications are subject to change without notice.

FM/MW/LW CASSETTE CAR STEREO

SONY®

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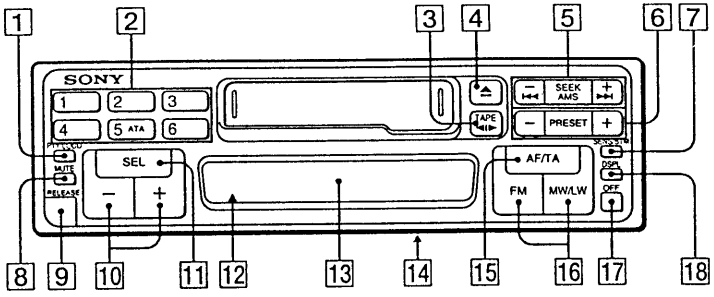
Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270°C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Location of controls



Refer to the pages in ● for details.

1 PTY/LOUD (Program type/loudness) button ⓫⓬

2 During radio reception:
Preset number buttons ❽

5 ATA ATA (Automatic Tuner Activation) button ❻

3 TAPE/◄I► (playback/transport direction change) button ❻

4 ⏏ (eject) button ❻⓬

5 SEEK/AMS button ❻❼

6 PRESET button ❻❼❽

7 SENS/BTM (Sensitivity/Best Tuning Memory Function) button ❼

8 MUTE button ⓬

9 RELEASE (front panel release) button ❹⓭

10 [-] [+] (volume/bass/treble/balance/fader control) button ❺⓬

11 SEL (control mode select) button ❺⓫⓬⓭

12 Reset button (located on the front side of the unit hidden by the front panel) ❹
Press this button when you use this unit for the first time, when you have changed the car battery, or when the buttons of this unit do not function properly.

13 Display window

14 POWER SELECT switch (located on the bottom of the unit)
See "POWER SELECT Switch" in the installation/Connections manual.

15 AF/TA (alternative frequency/traffic announcement) button ❾⓾

16 [FM] [MW/LW] (radio on/band select) button ❻❼❽

17 OFF button ❹❺❻⓬

18 DSPL (display mode change/time set) button ❺

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Features

General

- Detachable-front panel enables you to take the front panel away with you when you leave your car (page 4).
- Caution alarm will be activated if you turn off the ignition key without removing the front panel from the unit.
- Built-in power amplifier (max. output: 15 W × 4 ch) enables you to enjoy a 4-speaker system.

Cassette player section

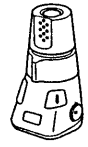
- ATA (Automatic Tuner Activation) for automatically turning on the tuner while fast-forwarding or rewinding a tape (page 6).

Tuner section

- Up to 30 stations can be preset: 18 stations on FM and 6 stations each on MW and LW.
- BTM (Best Tuning Memory) function automatically searches and stores the stations with the strongest signals on the preset number buttons in order of frequency (page 7).
- Information services are available, if FM RDS station can be received (page 9).
- Compatible with the RDS features such as EON (Enhanced Other Networks), AF (Alternative Frequency), TA (Traffic Announcement) and CT (Clock Time) function (page 9, 10, 11 and 12).

Optional Rotary commander can be used.

You can use the Rotary commander (RM-X2S) which can be operated like the wiper or headlight switch of your car while driving.

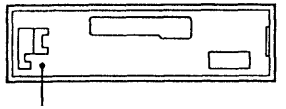


SECTION 1
GENERAL

This section is extracted from instruction manual.

Precautions

- Before operating the unit for the first time or after replacing the car battery, press the reset button with a ball-point pen etc., and then start operating the unit.



Reset button

- If your car was parked in direct sunlight resulting in a considerable rise in temperature inside the car, allow the unit to cool off before operating it.
- If no power is being supplied to the unit, check the connections first. If everything is in order, check the fuse.
- If no sound comes from the speakers of a 2-speaker system, set the fader control to the center position.

If you have any questions or problems concerning your unit that are not covered in this manual, please consult your nearest Sony dealer.

Notes on Cassettes

Cassette care

- Do not touch the tape surface of a cassette, as any dirt or dust will contaminate the heads.
- Keep cassettes away from equipment with built-in magnets such as speakers and amplifiers, as erasure or distortion on the recorded tape could occur.
- Do not expose cassettes to direct sunlight, extremely cold temperatures or moisture.
- When the tape is played back for a long period, the cassette shell may become warm because of the built-in power amplifier. However, this is not a sign of a malfunction.

Cassettes longer than 90 minutes

The use of cassettes longer than 90 minutes is not recommended except for long continuous play. The tapes used for these cassettes are very thin and tend to be stretched easily. Frequent playing and stopping of these tapes may cause them to be pulled into the cassette deck mechanism.

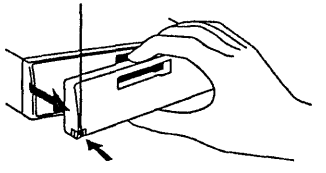
Detaching and Attaching the Front Panel

The front panel of this unit can be detached in order to prevent the unit from being stolen.

Detaching the Front Panel

Before detaching the front panel, be sure to press the OFF button first. Then press the RELEASE button to open up the front panel and detach the panel by pulling it towards you as illustrated.

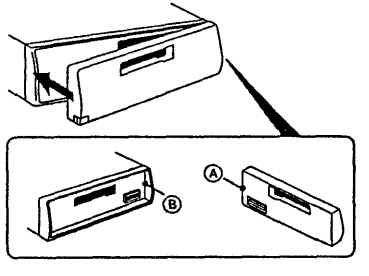
RELEASE button



Be sure not to drop the panel when detaching it from the unit.

Attaching the Front Panel

Apply the right hand side of the front panel to the unit by attaching part Ⓐ of the front panel to part Ⓑ of the unit as illustrated and push until it clicks.



Notes

- *Make sure that the front panel is the right way up when attaching it to the unit as it cannot be attached upside down.*
- *Do not press the front panel hard against the unit when attaching it to the unit. It can easily be attached by pressing it lightly against the unit.*
- *When you carry the front panel with you, put it in the supplied front panel case.*
- *Do not press hard or give excessive pressure to the display windows of the front panel.*
- *Before removing the front panel, be sure to turn the power off. However, if you press the RELEASE button to detach the panel while the unit is still turned on, the power will be automatically turned off in order to protect the speakers from being damaged.*
- *Do not expose the front panel to direct sunlight, heat sources such as hot air ducts or leave it in a humid place. Never leave it on the dashboard etc. of a car parked in direct sunlight where there may be a considerable rise in temperature inside the car.*

Caution alarm

If you turn the ignition key to the OFF position without removing the front panel, the caution alarm will be activated and a beep tone will be heard for a few seconds (only when the POWER SELECT switch is set to the Ⓐ position).

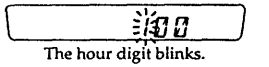
Setting the Clock

The clock has a 24-hour digital indication.

For example, setting it to 10:08

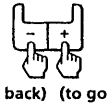
1 Display the time.
(Press the OFF or the DSPL button during the unit operation.)

2 Press the DSPL button for more than two seconds.

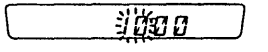


The hour digit blinks.

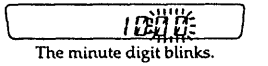
Set the hour digits.



(to go back) (to go forward)

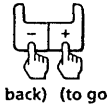


3 Press the SEL button momentarily.

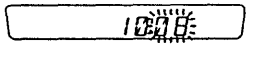


The minute digit blinks.

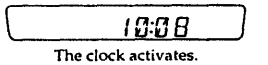
Set the minute digits.



(to go back) (to go forward)



4 Press the DSPL button momentarily.



The clock activates.

Note

If the POWER SELECT switch on the bottom of the unit is set to the Ⓑ position, the clock cannot be set unless the power is turned on. Set the clock after you have turned on the radio or started cassette playback.

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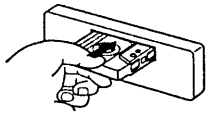
Cassette Player Operation

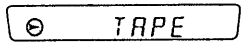
Listening to Tape Playback

After inserting the cassette, playback will start automatically.

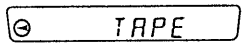


If a cassette is already inserted, press the [TAPE] button to start playback.
If you press during playback, the tape transport direction will change.

Indication of Tape Transport Direction



The side facing up is being played.



The side facing down is being played.

To stop playback,

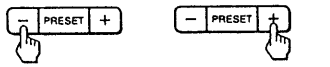
eject the cassette by pressing the [⏏] button or press the [OFF] button.

Playback stops also when you select radio by pressing the [FM] or [MW/LW] button.

Ejecting the Cassette

Press the [⏏] button.

To Fast-wind the Tape



Rewind Fast-forward

To start playback during rewinding or fast-forwarding, press the [TAPE] button.

Locating the Beginnings of the Tracks

— AMS (Automatic Music Sensor) Function

During playback, press either side of the SEEK/AMS button the number of times you wish to skip the tracks.

To locate the previous tracks To locate the succeeding tracks

Up to nine tracks can be skipped.

If the blanks between the tracks are shorter than four seconds, or if there are noises, the AMS function will not work. Also, the unit may read long sections of low volume music or quiet sections on a track as blanks between tracks.

Radio Reception during Fast-forwarding or Rewinding of a Tape

— ATA (Automatic Tuner Activation) Function

Press the [5 ATA] button during playback. → "ATA" appears on the display.

When fast-forwarding or rewinding with the [– PRESET +] button, the tuner will turn on automatically.

Radio Reception

Searching for the Stations Automatically — Automatic Tuning

1 Select the desired band.

FM1 → FM2 → FM3 → FM1

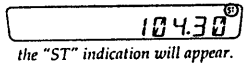
MW ⟷ LW

2 Press either side of the SEEK/AMS button to search for the station (automatic tuning).

For lower frequencies For higher frequencies

The scanning stops when a station is received. Press either side of the button repeatedly until the desired station is received.

When an FM stereo program with a sufficient signal strength is tuned in,



the "ST" indication will appear.

To avoid the automatic tuning from stopping on stations too frequently (local seek mode), press the [SENS/BTM] button momentarily to get the "LCL" indication.

Only the stations with relatively strong signals can be tuned in. The local seek mode functions only when the automatic tuning is in operation.

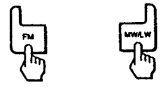
If FM Stereo Reception is Poor — Monaural Mode

Press the [SENS/BTM] button momentarily. → "MONO" appears on the display.

The sound will improve, but it will become monaural.

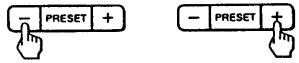
Tuning in by Adjusting the Frequency — Manual Tuning

1 Select the desired band.



2 Press and hold either side of the PRESET button.

Release the button when the desired station is received.



For lower frequencies For higher frequencies

PREVENTING ACCIDENTS!

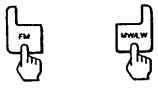
When tuning in during driving, use the automatic tuning and the memory preset search function (page 8) instead of the manual tuning.

Memorizing Stations Automatically

— BTM (Best Tuning Memory) Function

This function selects from the currently received band the stations with the strongest signals and memorizes them in order of their frequency.

1 Select the desired band.



2 Press the [SENS/BTM] button for more than two seconds.

- When there is no preset number indicated on the display window, stations will be stored on all preset number buttons on the currently selected band.
- When there is a preset number indicated on the display window, the unit will store stations on all preset number buttons from the one currently displayed.

For example, when you select FM2 and preset number 3 is displayed,

the operation will start from preset number 3 on FM2, and will stop at preset number 6 on FM3.

continue to next page →

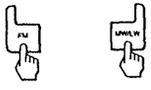
3 FM1, FM2 and FM3 only:
Press preset number button [1] momentarily, then press again for about two seconds until you hear a beep tone.
→ The station will be stored.

Repeat this operation with preset number buttons [2] through [6].

Notes
- *When "AF OFF" is displayed and you activate BTM, the unit will store only stations not transmitting RDS data. Depending on reception conditions however, it may happen that RDS stations are stored.*
- *When storing only RDS stations (page 10), step 3 is not necessary.*

Memorizing Only the Desired Stations

1 Select the desired band.



2 Tune in the station which you wish to store on the preset number button.

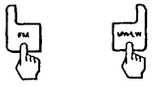
3 Keep the desired preset number button ([1] to [6]) pressed for about two seconds until you hear a beep tone.

The number of the pressed preset number button appears on the display window.

Up to 6 stations on each band (FM1, FM2, FM3, MW and LW) can be stored on the preset number buttons in order of your choice. Therefore, 18 stations can be memorized on FM.
If you try to store another station on the same preset number button, the previously stored station will be erased.

Receiving the Memorized Stations

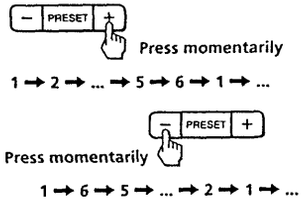
1 Select the desired band.



2 Press momentarily the preset number button ([1] to [6]) on which the desired station is stored.

Note
If you press the preset number button for more than two seconds, the currently received station will be memorized again. To receive the previously memorized station, make sure that the preset number button is pressed only momentarily.

Press either side of the PRESET button momentarily to receive in order the stations stored in the memory (Preset Search Function).



RDS Functions

Overview of the RDS Function

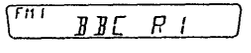
RDS (Radio Data System) is a system which uses FM radio waves to receive digital signals. Receiving RDS data with your car stereo unit allows it to use a variety of services. There are several ways to use these services. For instance, you can receive information such as traffic announcements and station names, or you can cause the unit to automatically retune to the strongest signal that is broadcasting the same program. So even if you travel a long distance, it is still possible to listen to the same program without having to retune manually again and again. Another function allows it to receive traffic announcements during tape playback.
RDS offers various functions, but depending on the country or region, not all of these are available. Following information explains the RDS functions of this unit.

Notes
- *In case of weak signals or other poor reception conditions, the RDS functions may not work properly.*
- *If the FM station currently received does not transmit RDS data, the functions described below will not work.*

Displaying the Station Name

By using RDS data, the name of the station currently received can be displayed.

Select an FM station. → If it is a station transmitting RDS data, the station name will appear on the display.



When "*" appears in addition to the usual frequency indication, an RDS station is being received.

Changing the displayed items
Each time you press the DSPL button, the display on the displayed items change as follows:

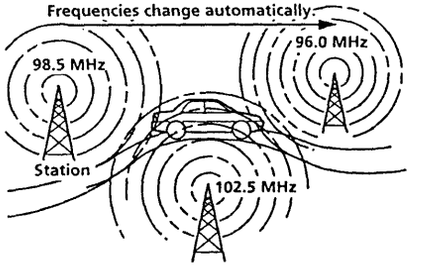
→ Frequency → Time → Station Name →

When "--------" is displayed instead of the station name, the currently received station does not transmit RDS data. After some seconds, "--------" will disappear, and the frequency will be displayed.

Listening to the Same Program without Manual Retuning even if the Location has Changed

— AF Function

Using "AF" (List of Alternative Frequencies), to automatically tune to that frequency among the frequencies of the currently received station, which carries the strongest signal in the respective region. As result, you can continuously listen to the same program during a long-distance drive without repeated manual retuning.



1 Select an FM station.

2 Press the [AF/TA] button to get "AF" displayed.

Notes
- *When the currently received frequency is weak and the same program cannot be received with another frequencies, "NO AF" will be indicated.*
- *When automatic tuning (page 7) is activated while "AF" is displayed, only FM stations which transmit RDS data will be received.*
- *When you press the AF/TA button while an MW or LW station is received, FM1 will be automatically selected.*

continue to next page →

Getting the Stored RDS Stations tuned in from the Broadcasting Networks

When the unit stores an RDS station transmitting the AF data on a preset number button, it stores not only its frequency but also its AF and PI (Programme Identification) data. The unit will store this data in its memory no matter whether the AF function is ON or OFF. Using the AF function, you can select a better signal station by re-tuning within the same broadcasting network of the memorized station.

Press the [AF/TA] button, then press the preset number button.

Note
If the AF data no other station can be found in the network of the memorized station, "PS" will blink for eight seconds. Then, "PI seek" will be displayed, and the unit will search for a station with the same PI data. If the unit finds no other station with the same PI data, it will return to the original station.

Listening to a Regional Program

Press the [AF/TA] button for more than two seconds. → "REG" appears on the display.

To cancel, press again for more than two seconds.

Note
The initial setting is "Regional ON".

This function cannot be activated in the United Kingdom and some other areas.

Local Link Function (United Kingdom only)
When local stations stored on the preset number buttons are poorly received, or when you want to change to another local station, use this function to activate automatic search for other local stations and to tune to them one by one. Within five seconds after its reception started, press the preset number button of the local station you want to change, and keep the button pressed. Repeat this procedure several times until the desired local station is received.

Storing only RDS stations
The BTM function (page 7) allows it to store only RDS stations on the preset number buttons; activate the AF function, then press the SENS/BTM button for two seconds.
When "AF OFF" is displayed and you activate BTM, the unit will store only stations not transmitting RDS data.

Listening to Traffic Announcements

By using TA (Traffic Announcement) and TP (Traffic Program) data, a station broadcasting traffic announcements can be automatically received. Even during tape playback you can hear traffic announcements, as the unit continues searching for such a station, and will automatically change to FM reception when a traffic announcement starts.

Press the [AF/TA] button to get "TA" displayed. → The unit will start to search for traffic information stations.
When a station transmitting a traffic announcement is found, "TP" will be displayed. During reception of the announcement, the "TA" indication will blink. The blinking will stop when the traffic announcement is over.

The TA function works also during tape playback.
Press the [AF/TA] button during tape playback. → "TA" appears on the display.
The unit will start to search for traffic announcements. When an announcement is received, tape playback will stop, and the traffic information station can be heard.

In case you press the [AF/TA] button while an MW or LW station is received, the unit will automatically change to FM reception.

Cancelling the Currently Received Traffic Announcement
Press the AF/TA button momentarily.

Cancelling the TA mode
Press the AF/TA button until "AF/TA OFF" appears on the display.

Note
If no traffic information stations can be received, "NO TP" will blink for about four seconds, and then the search for other stations transmitting traffic announcements will start.

Each time you press the AF/TA button, the display on the display window changes as follows:

AF ON → TA ON → AF/TA ON → AF/TA OFF →

The "EON" Indication
When both "TA" and "EON" are displayed, this means that in addition to the currently received station, another station too is broadcasting a traffic announcement.

Presetting the Volume of Traffic Announcements

It is possible to hear the traffic announcements at a previously set volume level. For example, even if volume is turned to zero, it will automatically change to the preset level when a traffic announcement starts. (In case the current volume level is higher than the preset level, the current level will not change.)

1 **Select an FM station and the desired volume level.**

2 Press button [3] while pressing the [SEL] button.
When you hear a beep tone, the setting is completed.

Receiving Emergency Announcements
In case of danger through an emergency or a natural disaster, RDS stations transmit emergency announcements to warn the drivers in that area. Such announcements can be received only when the AF or TA functions are activated. When an emergency announcement is received, tape playback will stop, the unit will automatically change to FM, and the information can be heard.

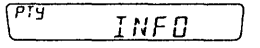
Selecting the Programme Type

Some stations use RDS to distinguish the types of their programmes during broadcasting.

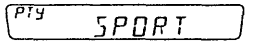
There are following programme types:

Programme types	Display
News	NEWS
Current Affairs	AFFAIRS
Information	INFO
Sport	SPORT
Education	EDUCATE
Drama	DRAMA
Culture	CULTURE
Science	SCIENCE
Varied	VARIED
Pop	POP M
Rock	ROCK M
Middle of the Road	M.O.R. M
Light Classical	LIGHT M
Serious Classics	CLASSICS
Other Music Types	OTHER M
Not specified *(when the station does not specify the programme type)*	NONE

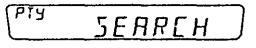
1 **Press the PTY/LOUD button during FM reception. → "PTY" appears on the display.**
If the currently received station is transmitting PTY (programme type selection) data, one of above-shown programme type names will be displayed. If the currently received station is no RDS station, or if the RDS data has not been read, "- - - - - - - - " will be displayed. In this case, you can select "NEWS" or other programme types by pressing the PTY/LOUD button.



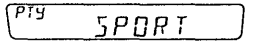
2 **Press again within five seconds.**
The programme types will be displayed in the order shown above.



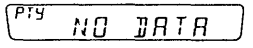
3 **When the desired programme type is displayed, press the + side of the SEEK/AMS button. → "SEARCH" will blink in the display.**
The unit will search for station broadcasting this programme type.



4 **When a programme of the desired type is received, the programme type will again appear in the display for five seconds.**



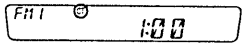
If the desired programme type cannot be found, "NO DATA" will be displayed for five seconds, and the unit returns to the previous station (programme).



Using RDS Data for Setting the Clock Automatically

By receiving CT (Clock Time) data, the clock of this unit can be set automatically.

During FM reception, press the [2] button while pressing the [SEL] button. → "CT" will be displayed, and the clock will be set.



To cancel the CT function, press these buttons again.

Notes

- *The CT function may not work even though an RDS station is being received.*
- *The time set by the CT function may not be exact.*

EN

8

Other Functions

Adjusting the Sound Characteristics

1 Select the item you want to adjust by pressing the [SEL] button repeatedly.

VOL (volume) → BAS (bass) → TRE (treble) → BAL (balance) → FAD (fader) → VOL (volume)

2 Adjust the selected item by pressing either the [−] or [+] button.

Adjust within three seconds after selecting. (After three seconds the button will again serve as volume control button.)

Enjoying Bass and Treble even at Low Volume

— Loudness Function

Press the [PTY/LOUD] button for more than two seconds. → "LOUD" will appear on the display.

Bass and treble will be reinforced. To cancel, press again.

Muting the Sound Quickly

— Mute Function

Press the [MUTE] button. → The "MUTE" indication flashes.

The sound is muted at once. To restore the previous volume level, press again.

This function will be also canceled when:

— *the [+] or OFF button is pressed.*

— *ejecting a cassette by pressing the ⏏ button during tape playback.*

Muting the Beep Tone

Press the [6] button while pressing the [SEL] button.

To obtain the beep tone again, press these buttons once more.

Installation

Precautions

- Do not tamper with the four holes on the upper surface of the unit. They are for tuner adjustments to be done only by service technicians.
- Choose the installation location carefully so that the unit will not hamper the driver during driving.
- Avoid installing the unit where it would be subject to high temperatures, such as from direct sunlight or hot air from the heater, or where it would be subject to dust, dirt or excessive vibration.
- Use only the supplied mounting hardware for a safe and secure installation.

Mounting angle adjustment

Adjust the mounting angle to less than 20°.

How to Detach and Attach the Front Panel

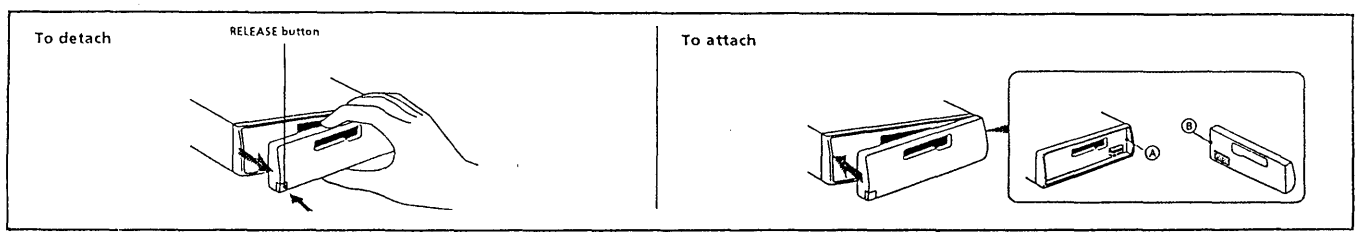
Before installing the unit, detach the front panel.

To detach

Press the RELEASE button to open up the front panel, then pull it out.

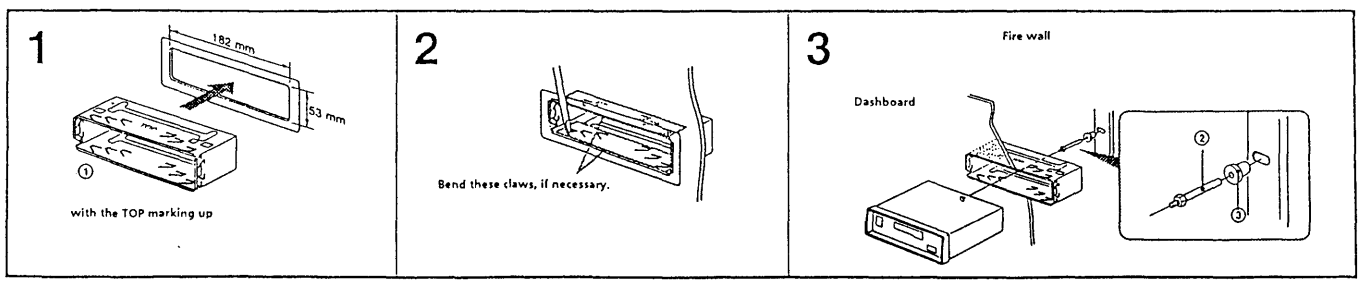
To attach

Align the parts Ⓐ and Ⓑ, and push the front panel until it clicks.



Mounting Example

Installation in the dashboard



Connections

Caution

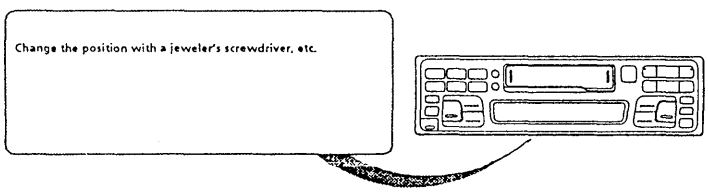
- This unit is designed for negative ground 12 V DC operation only.
- Before making connections, disconnect the ground terminal of the car battery to avoid short circuits.
- Connect the yellow and red power input leads only after all other leads have been connected.
- Be sure to connect the red power input lead to the positive 12 V power terminal which is energized when the ignition key is in the accessory position.
- Run all ground wires to a common ground point.

If Your Car has No Accessory Position on the Ignition Key Switch — POWER SELECT Switch

The illumination on the front panel is factory-set to be turned on even when the unit is not being played. However, this setting may cause some car battery wear if your car has no accessory position on the ignition key switch. To avoid this battery wear, set the POWER SELECT switch located on the bottom of the unit to the O position, then press the reset button. The illumination is reset to stay off while the unit is not being played.

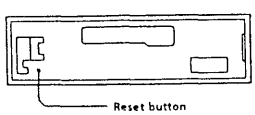
Note

The caution alarm for the front panel is not activated when the POWER SELECT switch is set to the O position.

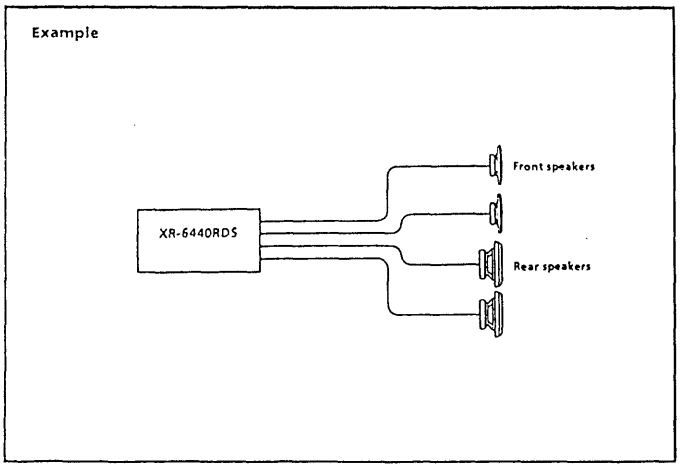


Reset Button

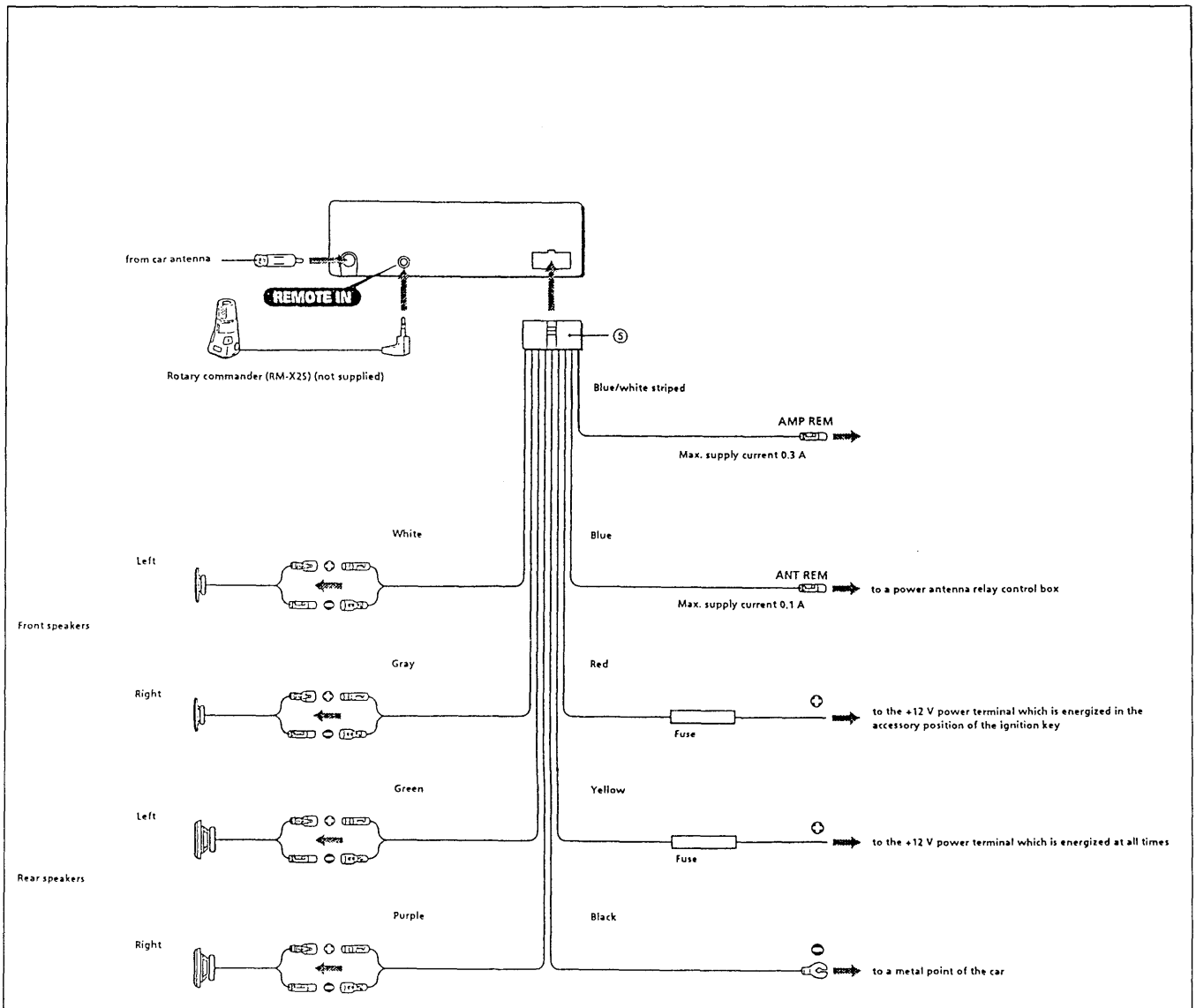
When the installation and connections are over, be sure to press the reset button with a ball-point pen etc.



Connection Diagram



Connections of Example



Notes on the control leads

- *The power antenna control lead (blue) supplies +12 V DC when you turn on the tuner or when you activate the ATA (Automatic Tuner Activation), AF (Alternative Frequency) or the TA (Traffic Announcement) function.*
- *A power antenna without relay box cannot be used with this unit.*

Memory hold connection

When the yellow power input lead is connected, power will always be supplied to the memory circuit even when the ignition key is turned off.

Notes on speaker connection

- *Before connecting the speakers, turn the unit off.*
- *Use speakers with an impedance of 4 to 8 ohms, and with adequate power handling capacities. Otherwise, the speakers may be damaged.*
- *Do not connect the terminals of the speaker system to the car chassis, and do not connect the terminals of the right speaker with those of the left speaker.*
- *Do not attempt to connect the speakers in parallel.*
- *Do not connect any active speakers (with built-in amplifiers) to the speaker terminals of the unit. Doing so may damage the active speakers. Therefore, be sure to connect passive speakers to these terminals.*

SECTION 2
ADJUSTMENTS

PRECAUTION

1. Wipe the following components with an absorbent cotton cloth moistened with alcohol before adjustment :
   PB head　　Pinch roller
   Idlers　　Rubber belts
   Capstan
2. Demagnetize the PB head using a head demagnetizer.
3. Be careful not to use a magnetized screwdriver
4. After the adjustments is completed, lock the adjustment parts using screws.
5. Unless otherwise specified, make adjustments at the specified voltage (14.4V)

Torque Measurement

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	30 – 65g•cm (0.42 – 0.90 oz•inch)
FWD Back Tension		0.5 – 4.5g•cm (0.007 – 0.06 oz•inch)
REV	CQ-102RC	30 – 65g•cm (0.42 – 0.90 oz•inch)
REV Back Tension		0.5 – 4.5g•cm (0.007 – 0.06 oz•inch)
FF, REW	CQ-201B	60 – 200g•cm (0.84 – 2.78 oz•inch)

Tape Tension Measurement

Mode	Torque Meter	Meter Reading
FWD	CQ-403A	more than 90g (more than 3.18 oz)
REV	CQ-403R	

Test Tape

Type	Signal	Used for
P4-A063	6.3kHz, – 10dB	Head azimuth Adjustment
WS-48A	3kHz, 0dB	Tape Speed Adjustment

SECTION 3
ELECTRICAL ADJUSTMENTS

TEST MODE

This set have the test mode function, in the test mode. FM Auto Scan/Stop Level and AM Auto Scan/Stop Level adjustments can be performed easier than it in ordinaly procedure.

<Set the Test Mode>

1. Set the "OFF" mode.
2. Push the preset [4] button.
3. Push the preset [5] button.
4. Press the preset [1] button for two seconds.
5. Then the display indicates five patterns and stops, the test mode is set.

<Rerease the Test mode>

1. Push the "OFF" button.

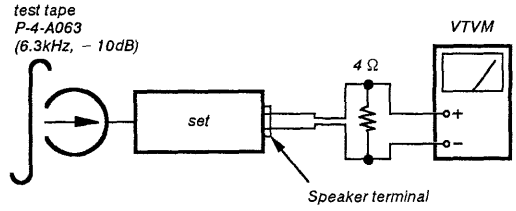
See the adjustment location from on page 15 for the adjustment.

DECK SECTION　0 dB=0.775V

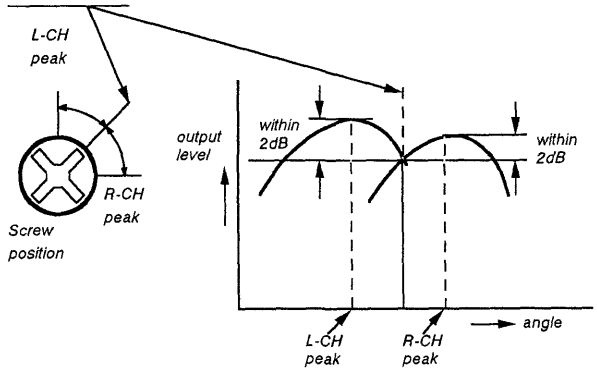
PB Head Azimuth Adjustment

Procedure :

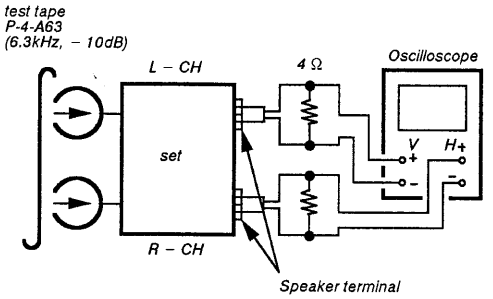
1. Put the set into the FWD PB mode.

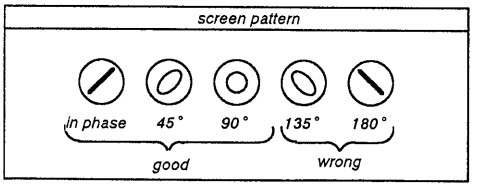


2. Turn the screw and check the output peak value. Adjust the screw so that the peak value in channels L and R coincides within 2dB.

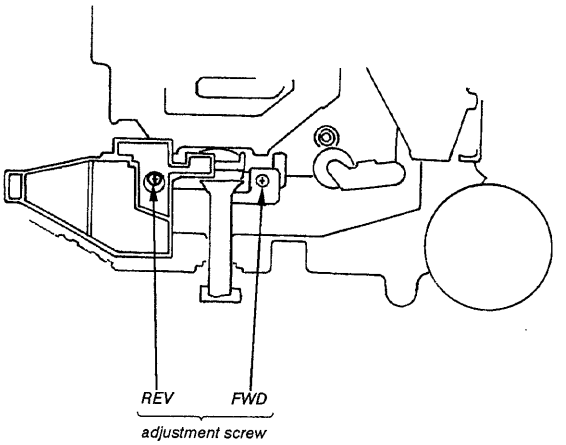


3. Playback Mode





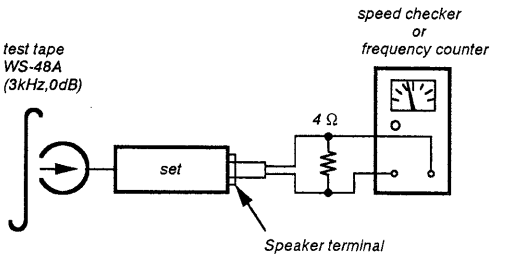
4. Repeat the above adjustment for the REV PB mode.



Capstan Motor Tape Speed Adjustment

Procedure :

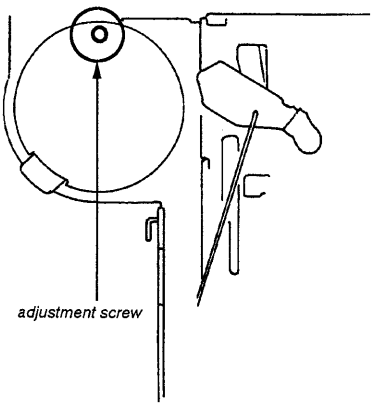
1. Put the set into the FWD PB mode.



Specification : Constant speed

Speed checker	frequency counter
– 1.5 to +2.5%	2,955 to 3,075 Hz

Adjustment Location : Capstan motor volume



TUNER SECTION

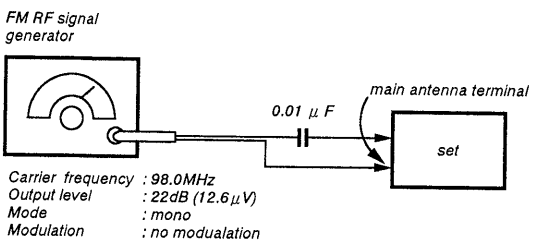
0 dB=1 μV

Cautions during repair
When the front end is defective, replace it by a new one because its internal block is difficult to repair.

FM Auto Scan Stop Level Adjustment

Setting :

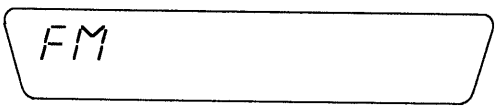
TUNER button : FM



Procedure :

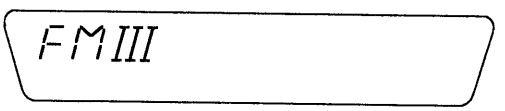
1. Set to the test mode. (see page 11)
2. Push the FM button.

Main Display



3. Push the preset SEEK/AMS + ⏭ button.
4. Adjust with the volume RV3 on TU1 so that the "FM" indication turns to "FMIII" indication on the main display window.
   But in case of already indicated "FMIII", turn the RV3 so that put out light " III " indication and adjustment.

Main Display



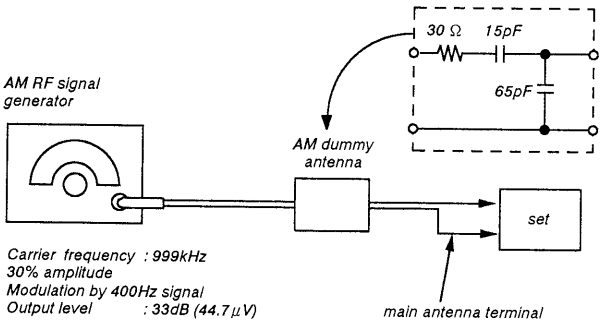
Specification : Stop sensitivity : 22dB ± 3dB

Note : " III " indication of main display was align voltage of TP (SD).
TP (SD) voltage 0V → " III " light off
TP (SD) voltage 5V → " III " light on

MW Auto Scan Stop Level Adjustment

Setting :

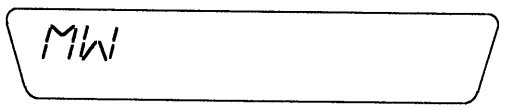
TUNER button : MW



Procedure :

1. Set to the test mode. (see page 11)
2. Push the MW/LW button and set to MW.

Main Display



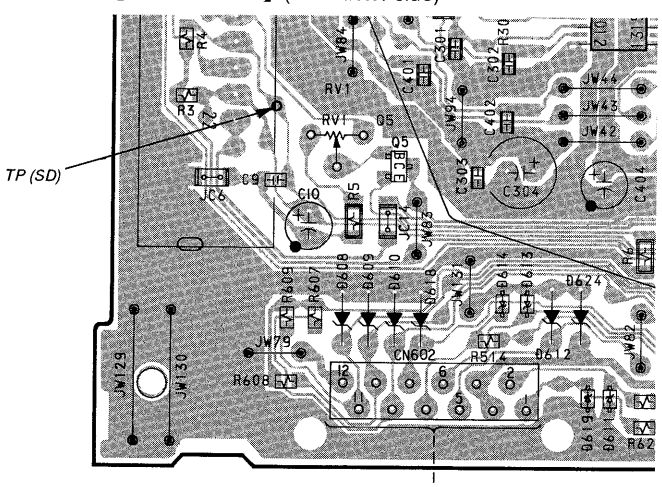
3. Adjust with the volume RV1 on TU1 so that the "MW" indication turns to "MWIII" indication on the main display window.
   But in case of already indicated "MWIII", turn the RV1 so that put out light " III " indication and adjustment.

Main Display

Specification : Stop sensitivity : 33dB ± 3dB

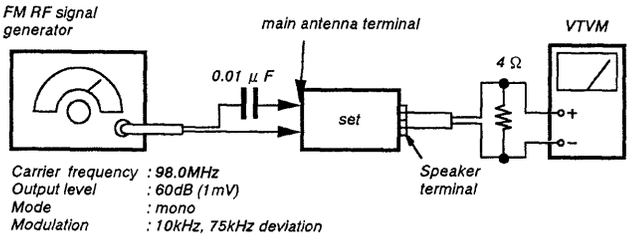
Note : " III " indication of main display was align voltage of TP (SD).
TP (SD) voltage 0V → " III " light off
TP (SD) voltage 5V → " III " light on

【MAIN BOARD】 (Conductor side)



High Cut Control Effect Adjustment

Setting :
TUNER button : FM

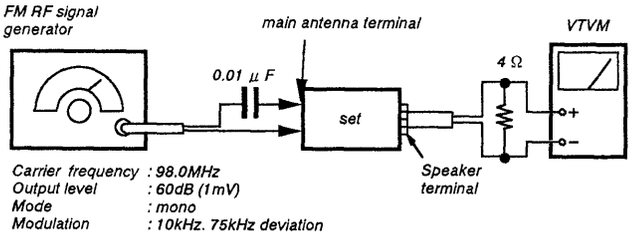


Procedure :
1. Tune the 98.0MHz.
2. The then output level is supposing that (A) dB.
3. Adjust with the volume RV2 on TU1 so that the output Level is (A) − 5 ± 2dB then signal generator input set to 20dB.

Adjustment Location : Main board (TU1)

FM Noise Focus Adjustment

Setting :
TUNER button : FM

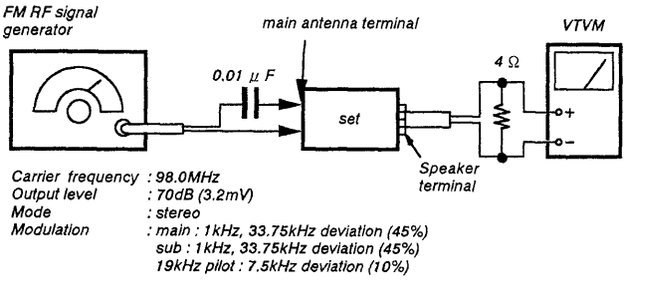


Procedure :
1. Tune the 98.0MHz.
2. The then output level is supposing that (B) dB.
3. Adjust with the volume RV5 on TU1 so that the output Level is (B) − 30 ± 3dB then signal generator input set to − 20dB.

Adjustment Location : Main board (TU1)

FM Stereo Separation (30dB) Adjustment

Setting :
TUNER button : FM



Procedure :

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV4 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV4 for minimum reading.

L-CH Stereo separation : Ⓐ − Ⓑ
R-CH Stereo separation : Ⓒ − Ⓓ
The separations of both channels should be equal.

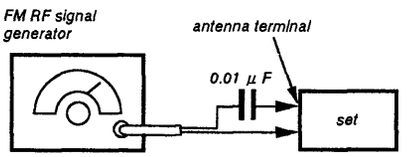
Specification : Separation more than 30dB.

Adjustment Location : Main board (TU1)

S Meter Adjustment

Setting:

TUNER button : FM

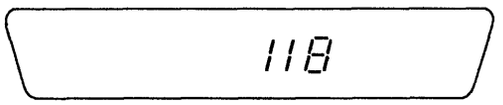


Carrier frequency : 98.0MHz
Output level : 35dB (56.2 μ V)
Modulation :no modulation

Procedure :

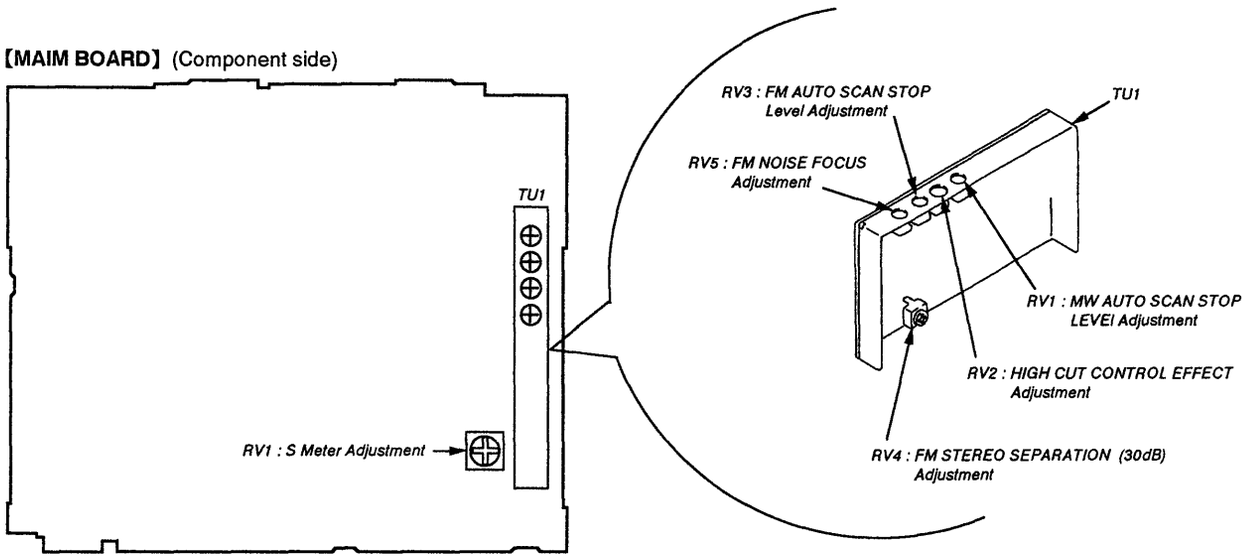
1. Set to the test mode.(see page 11)
2. Push the [FM] button.
3. Tune the 98.0MHz.
4. Push the preset [6] button to set the level indication on the main display window.
5. Adjust with the RV1 on main board so that the level indication turn to "118 ± 2" indication on the main display window.

Main Display



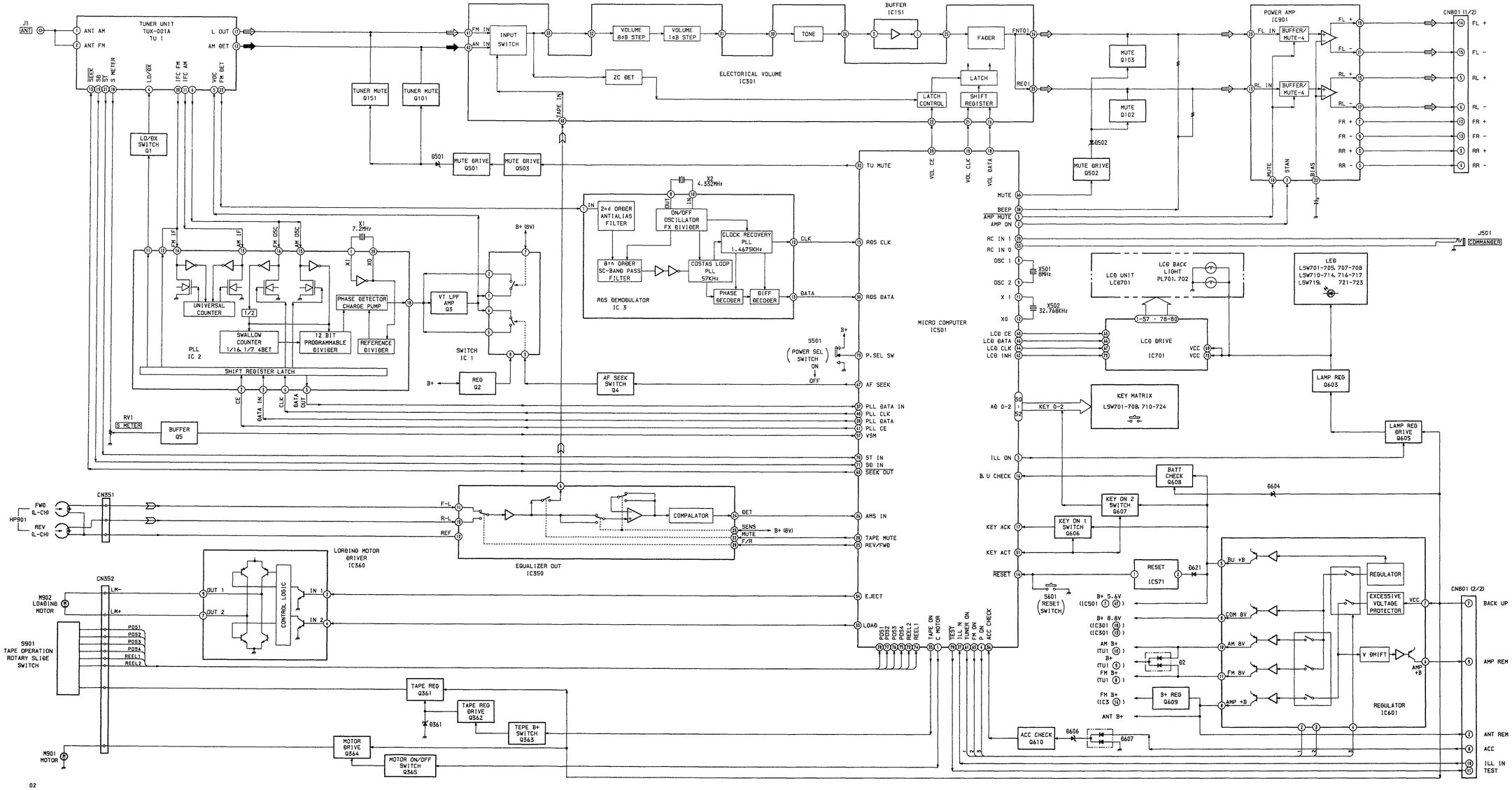
Adjustment Parts Location Diagrams :

【MAIM BOARD】 (Component side)


TU1
RV1 : S Meter Adjustment
RV3 : FM AUTO SCAN STOP Level Adjustment
TU1
RV5 : FM NOISE FOCUS Adjustment
RV1 : MW AUTO SCAN STOP LEVEl Adjustment
RV2 : HIGH CUT CONTROL EFFECT Adjustment
RV4 : FM STEREO SEPARATION (30dB) Adjustment

SECTION 4
DIAGRAMS

4-1. BLOCK DIAGRAM



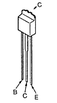
• Signal path.
⇨ : FM
➡ : AM
⇨ :TAPE

● SEMICONDUCTOR LEAD LAYOUTS

DTA114EK
DTC114EK
DTC124TK
2SC1623-L5L6
2SC2412K

2SK1657-T1B

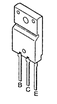
2SC3073-Y



2SB1115A

XN1A312-TX

2SD2525



DAN202K-T-147

DTZ3.9A
DTZ5.1C
DTZ7.5C
DTZ9.1B
MA111

MA721WK-(TX)

MA4091-H(QZ)

MTZ12BC
RD3.9ES-B1
RD5.6ES-B2
RD6.2ES-B2
RD7.5ES-B2
RD12ES-B2

1N5404TU

1SS226

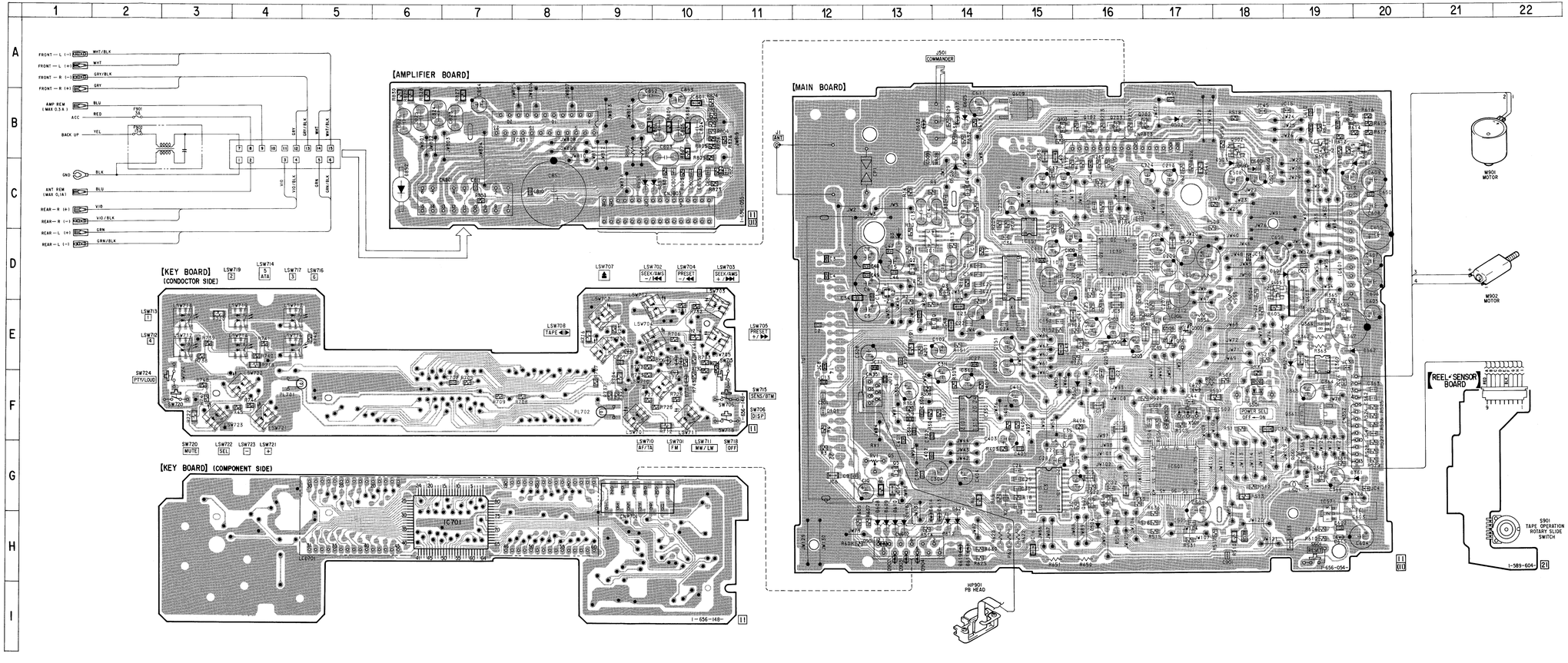
● SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location
D2	D - 13	IC1	D - 13
D3	D - 13	IC2	D - 15
D350	F - 15	IC3	G - 15
D361	G - 19	IC151	C - 15
D362	E - 19	IC301	D - 16
D501	E - 16	IC350	F - 14
D502	B - 17	IC360	E - 19
D503	C - 18	IC501	G - 17
D504	H - 16	IC571	G - 19
D505	H - 16	IC601	D - 19
D508	C - 14	IC701	H - 7
D601	D - 18	IC801	B - 8
D604	C - 19		
D605	B - 14		
D606	C - 19	Q1	E - 13
		Q2	D - 13
D607	B - 20	Q3	D - 14
D608	H - 13	Q4	C - 14
D609	H - 13	Q5	G - 13
D610	H - 13		
D611	H - 14	Q101	E - 16
		Q102	B - 16
D612	H - 14	Q103	B - 15
D613	H - 14	Q151	E - 15
D614	H - 13	Q201	E - 16
D615	H - 19		
D617	B - 14	Q202	B - 16
		Q203	B - 16
D618	H - 13	Q361	F - 19
D619	H - 14	Q362	G - 19
D620	F - 17	Q363	G - 19
D621	E - 19		
D622	B - 13	Q364	E - 19
		Q365	E - 19
D624	H - 14	Q501	E - 17
D650	C - 18	Q502	B - 18
D701	E - 3	Q503	E - 17
D702	E - 9		
D704	F - 10	Q603	D - 19
		Q605	D - 18
D705	E - 10	Q606	G - 16
D706	E - 10	Q607	G - 16
D707	E - 10	Q608	B - 19
D851	C - 9		
D852	C - 9	Q609	B - 15
		Q610	B - 19
D853	C - 9		

Note:

- ⊶ : parts extracted from the component side.
- ▨ : Pattern on the side which is seen.

4-2. PRINTED WIRING BOARDS



Note :

- All capacitors are in μ F unless otherwise noted. pF: μ μ F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- B+ : B+ Line
- ▭ : adjustment for repair.
- Power voltage is dc 14.4V and fed with regulated dc power supply from external power voltage terminals (CN801).
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  ( ) : AM
  ( ) : PLAY
- Voltages are taken with a VOM (Input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : FM ⇨ : PB

4-3. SCHEMATIC DIAGRAM

• Refer to page 27 for IC Block Diagrams. • Refer to page 29 for Waveforms.

【 MAIN BOARD 】

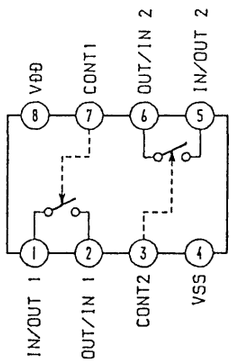
【 AMPLIFIER BOARD 】

【KEY BOARD】

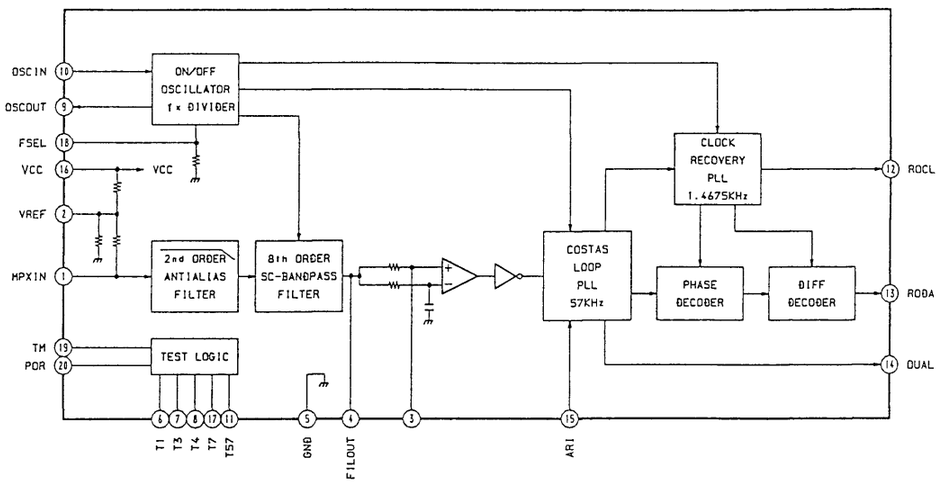
【REEL SENSOR BOARD】

4-4. IC BLOCK DIAGRAMS

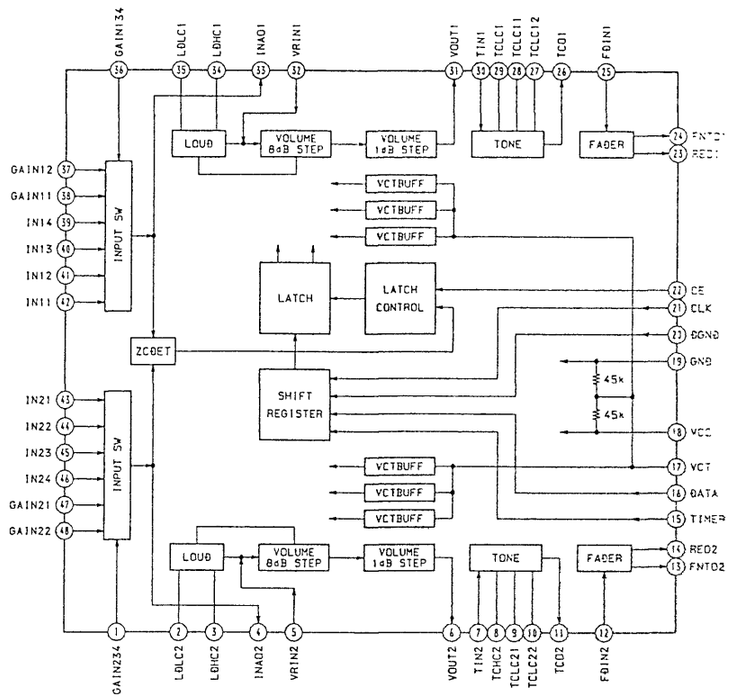
IC1 TC4W66F



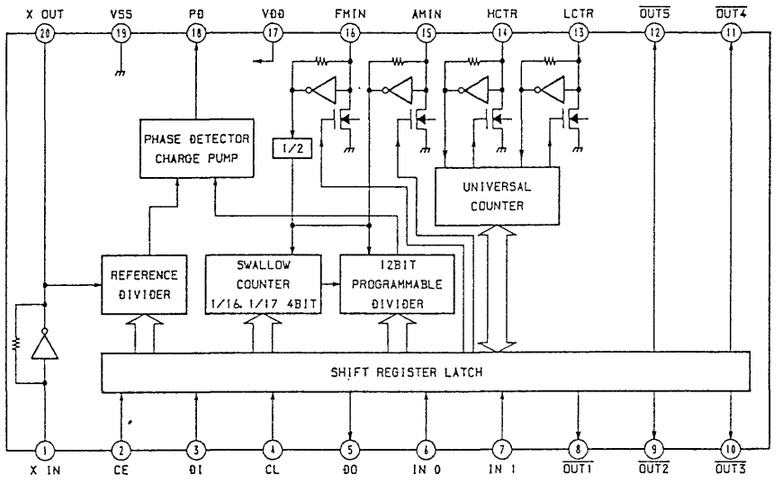
IC3 TDA7330BD-013TR



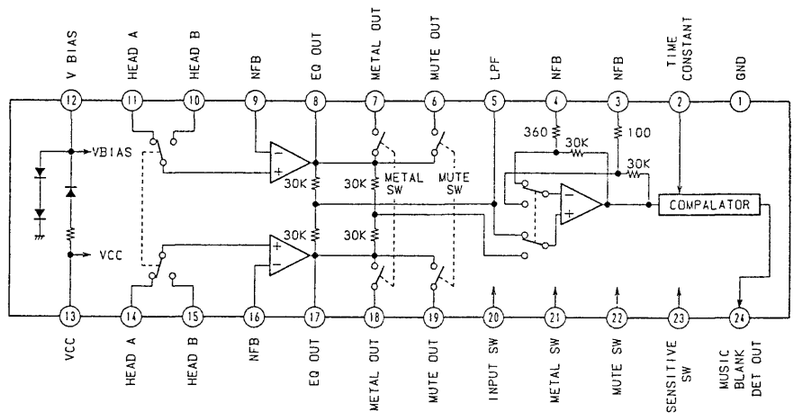
IC 301 CXA1946Q



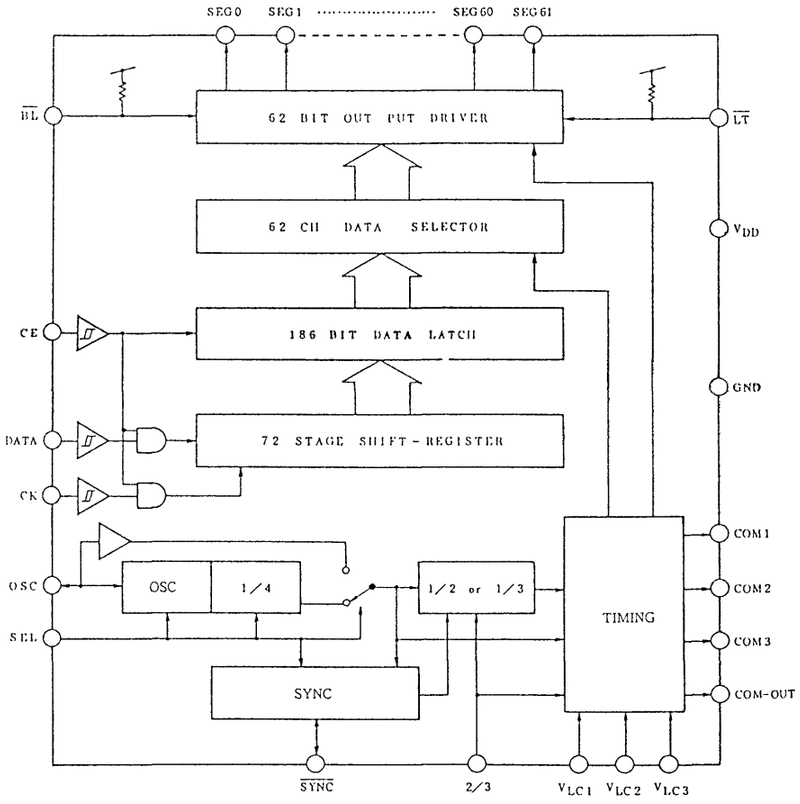
IC2 LC7216M



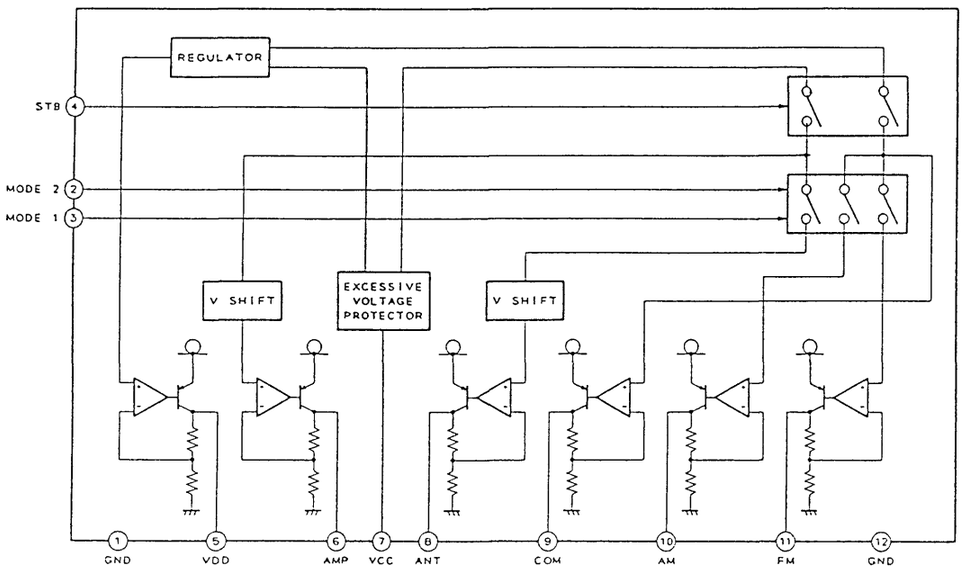
IC350 BA3430FS



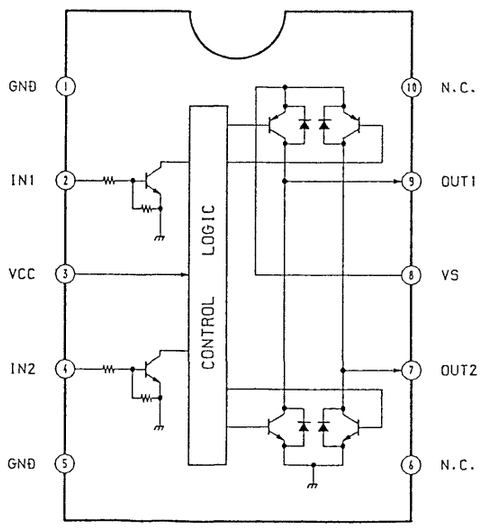
IC701 TC9240F



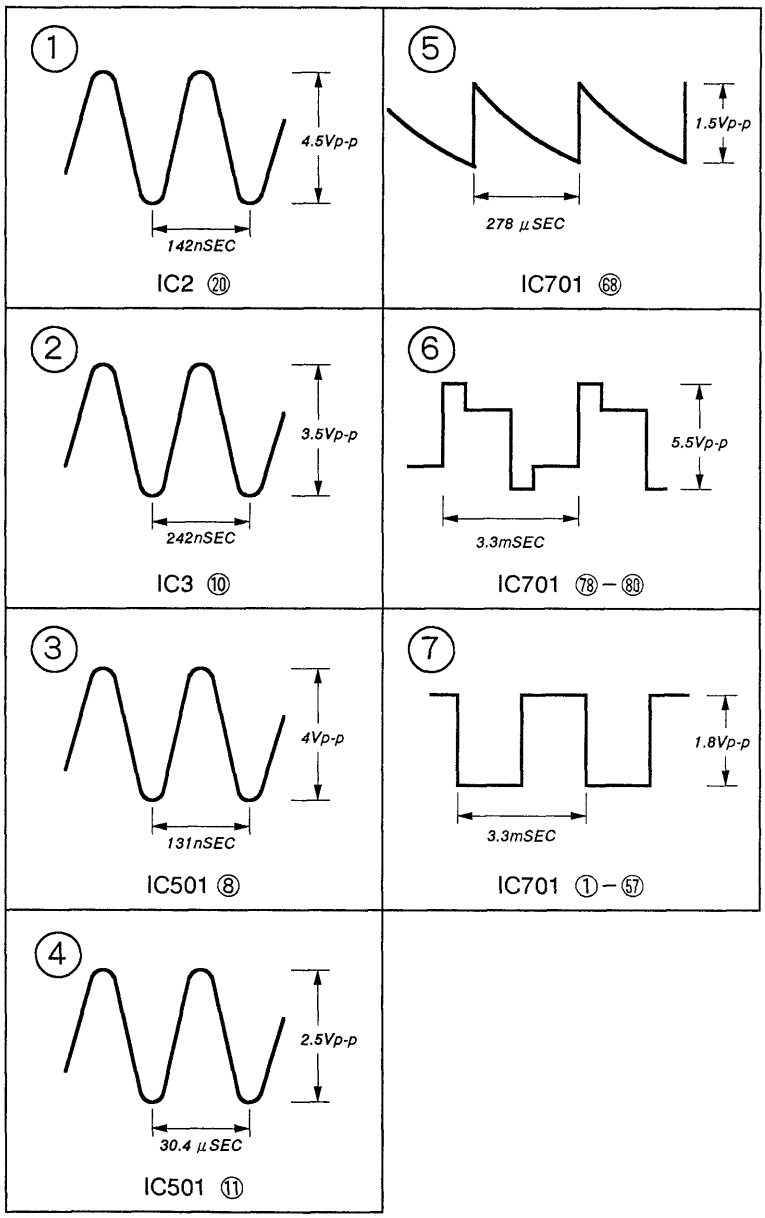
IC601 BA3910B-V3



IC360 LB1638M



• WAVEFORMS

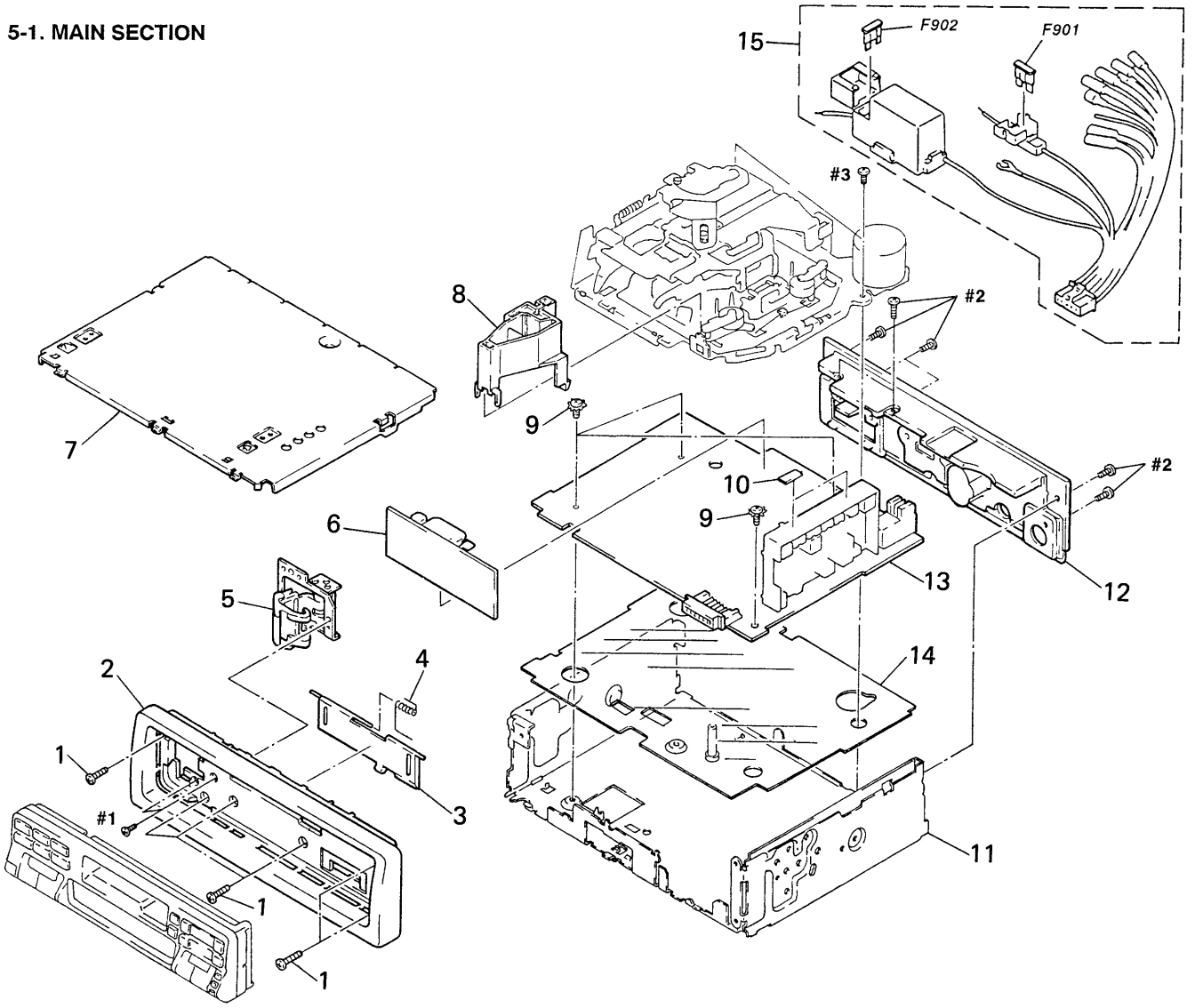

①
4.5Vp-p
142nSEC
IC2 ⑳
⑤
1.5Vp-p
278 μSEC
IC701 ⑱
②
3.5Vp-p
242nSEC
IC3 ⑩
⑥
5.5Vp-p
3.3mSEC
IC701 ⑱－⑳
③
4Vp-p
131nSEC
IC501 ⑧
⑦
1.8Vp-p
3.3mSEC
IC701 ①－⑰
④
2.5Vp-p
30.4 μSEC
IC501 ⑪

SECTION 5
EXPLODED VIEWS

NOTE :

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Color indication of Appearance Parts Example :
  KNOB, BALANCE (WHITE)....(RED)
  ↑ ↑
  Parts color Cabinet's color
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

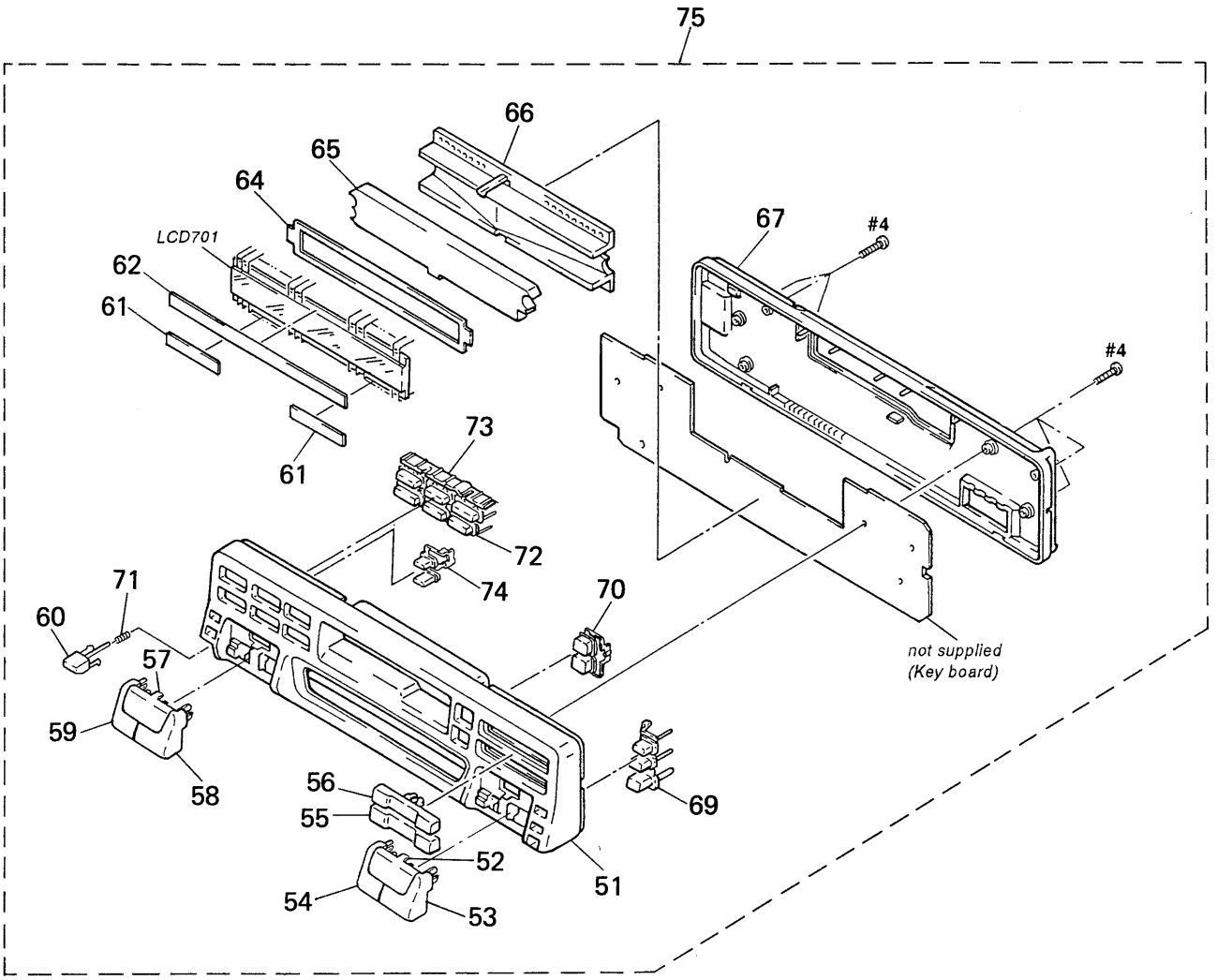
5-1. MAIN SECTION



Ref. No.	Part No.	Description	Remark
1	3-907-995-01	SCREW (2.6×8) (BZN), +PTT	
2	3-921-728-01	PANEL, SUB	
3	3-922-859-01	DOOR, CASSETTE	
4	3-913-076-01	SPRING (C DOOR), TORSION	
5	X-3367-636-1	LOCK ASSY	
* 6	1-656-055-11	AMPLIFIER BOARD	
* 7	X-3369-736-1	COVER ASSY	
8	3-916-872-01	GUIDE	
9	3-915-923-01	SCREW, GROUND POINT	
10	9-911-840-XX	CUSHION (U)	

Ref. No.	Part No.	Description	Remark
* 11	X-3369-735-1	CHASSIS ASSY	
* 12	3-921-658-21	HEAT SINK	
* 13	A-3298-592-A	MAIN BOARD, COMPLETE (AEP, UK)	
* 13	A-3298-593-A	MAIN BOARD, COMPLETE (German)	
* 14	3-921-976-01	SHEET, INSULATING	
15	1-765-082-11	CORD (WITH CONNECTOR) (POWER, SPEAKER) (includind F901, 902)	
F901	1-533-326-11	FUSE (BLADE TYPE) (AUTO FUSE) (3A)	
F902	1-533-331-11	FUSE (BLADE TYPE) (AUTO FUSE) (15A)	

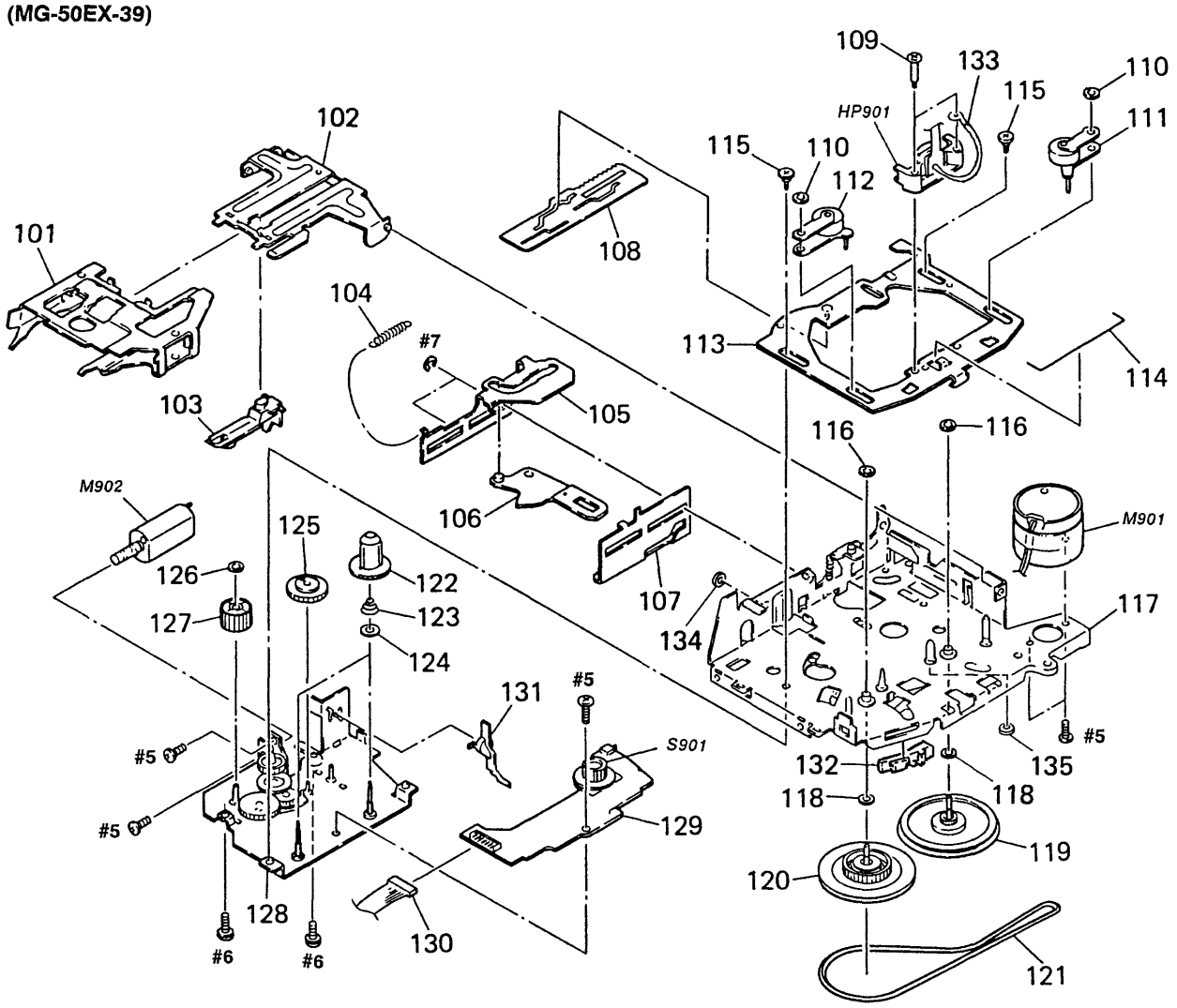
5-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	3-918-673-31	PANEL, FRONT	
52	3-918-681-11	BUTTON (U)	
53	3-918-683-11	BUTTON (R)	
54	3-918-682-11	BUTTON (L)	
55	3-918-686-01	BUTTON (PRESET)	
56	3-918-685-01	BUTTON (SEEK)	
57	3-918-678-01	BUTTON (SEL)	
58	3-918-679-01	BUTTON (+)	
59	3-918-680-01	BUTTON (-)	
60	3-918-689-01	BUTTON (RELEASE)	
61	3-921-727-02	SHEET (LCD) (S)	
62	3-921-726-02	SHEET (LCD) (L)	

Ref. No.	Part No.	Description	Remark
* 64	3-921-660-01	SHEET (REFLECTOR)	
* 65	3-921-731-01	PLATE, LIGHT GUIDE	
* 66	3-921-730-01	HOLDER (LCD)	
67	3-921-729-01	PANEL, FRONT BACK	
69	3-918-688-01	BUTTON (3 GANG)	
70	3-918-684-01	BUTTON (EJECT)	
71	3-918-693-01	SPRING (RELEASE)	
72	3-918-677-01	BUTTON (4-6)	
73	3-918-676-01	BUTTON (1-3)	
74	3-918-687-01	BUTTON (2 GANG)	
* 75	A-3291-310-A	PANEL ASSY, FRONT	
LCD701	1-810-772-21	DISPLAY PANEL, LIQUID CRYSTAL	

5-3. MECHANISM DECK SECTION
(MG-50EX-39)



Ref. No.	Part No.	Description	Remark
101	3-912-881-01	HOUSING, CASSETTE	
* 102	3-912-882-01	HANGER, HOUSING	
103	3-912-884-01	CATCHER	
104	3-912-885-01	SPRING (LOADING LEVER), TENSION	
* 105	3-912-892-01	LEVER (B), LOADING	
* 106	3-912-883-01	ARM, SECTION	
* 107	3-922-941-01	LEVER (A2), LOADING	
* 108	3-912-876-01	LEVER, MODE	
109	3-912-893-01	SCREW, HEAD FITTING	
110	3-579-788-01	WASHER, STOPPER	
111	X-3368-266-1	PINCH LEVER (F) ASSY	
112	X-3368-267-1	PINCH LEVER (R) ASSY	
* 113	X-3368-268-1	BASE ASSY, HEAD	
114	3-912-879-01	SPRING, PINCH PRESS	
115	3-912-897-01	SCREW (HB), STEP	
116	3-364-151-01	WASHER	
117	X-3368-841-3	CHASSIS (SV) ASSY (A), MECHANICAL	
118	3-701-437-21	WASHER	
119	3-913-825-01	FLYWHEEL (FZ)	
120	X-3369-124-1	CLUTCH (S) ASSY, FR	

Ref. No.	Part No.	Description	Remark
121	3-912-896-01	BELT	
122	X-3368-843-1	GEAR ASSY, REEL	
123	3-917-222-01	SPRING (B-T), COIL	
124	3-917-324-01	WASHER (B-T)	
125	3-912-888-01	GEAR (LOADING E)	
126	3-321-813-01	WASHER, COTTER POLYETHYLENE	
127	3-912-889-01	GEAR (LOADING F)	
128	X-3368-842-2	BRACKET ASSY, REEL	
129	1-589-604-11	REEL SENSOR BOARD	
130	1-765-460-12	CORD (WITH CONNECTOR)	
131	3-916-358-01	LEVER (TAPE IN 2)	
132	3-919-553-01	GUIDE (BELT)	
* 133	3-917-258-01	PLATE, GROUND	
134	3-315-384-11	WASHER, STOPPER	
135	3-344-223-01	WASHER	
HP901	1-500-196-11	HEAD, MAGNETIC (PLAYBACK)	
M901	X-3368-684-1	MOTOR ASSY, MAIN	
M902	X-3368-685-1	MOTOR ASSY, SUB	
S901	1-692-885-11	SWITCH, ROTARY SLIDE (TAPE OPERATION)	

SECTION 6
ELECTRICAL PARTS LIST

AMPLIFIER **KEY**

NOTE :
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE : Metal oxide-film resistor
  F : nonflammable
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ , for example :
  uA.... : μ A.... , uPA.... : μ PA....
  uPB.... : μ PB.... , uPC.... : μ PC....
  uPD.... : μ PD....
- CAPACITORS
  uF : μ F
- COILS
  uH : μ H

When indicating parts by reference number, please include the board.

Ref.No.	Part No.	Description			Remark
*	1-656-055-11	AMPLIFIER BOARD			
		**********			
		< CAPACITOR >			
C801	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C802	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C803-806					
	1-136-165-00	FILM	0.1uF	5%	50V
C810	1-163-021-00	CERAMIC CHIP	0.01uF	5%	50V
C811	1-163-021-00	CERAMIC CHIP	0.01uF	5%	50V
C821	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C822	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C823-826					
	1-136-165-00	FILM	0.1uF	5%	50V
C851	1-128-268-11	ELECT	3300uF	20%	16V
C852	1-136-165-00	FILM	0.1uF	5%	50V
C853	1-126-157-11	ELECT	10uF	20%	16V
C854	1-126-157-11	ELECT	10uF	20%	16V
C855	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
		< CONNECTOR >			
CN801	1-764-426-21	PLUG, CONNECTOR 15P			
		< CONNECTOR >			
CNJ803	1-580-279-11	SOCKET, CONNECTOR 16P			
		< DIODE >			
D851	8-719-110-03	DIODE RD7.5ES-B2			
D852	8-719-049-38	DIODE 1N5404TU			
D853	8-719-110-03	DIODE RD7.5ES-B2			
		< IC >			
IC801	8-759-279-87	IC HA13151A			
		< JUMPER RESISTOR >			
JC801	1-216-296-00	METAL CHIP	0	5%	1/8W
		< RESISTOR >			
R801	1-216-073-00	METAL CHIP	10K	5%	1/10W
R802	1-216-077-00	METAL CHIP	15K	5%	1/10W
R803	1-216-073-00	METAL CHIP	10K	5%	1/10W
R804	1-216-077-00	METAL CHIP	15K	5%	1/10W
R805	1-216-121-00	METAL CHIP	1M	5%	1/10W
R806	1-216-121-00	METAL CHIP	1M	5%	1/10W
R807-810					
	1-216-134-00	METAL CHIP	2.2	5%	1/8W
R821	1-216-073-00	METAL CHIP	10K	5%	1/10W
R822	1-216-077-00	METAL CHIP	15K	5%	1/10W
R823	1-216-073-00	METAL CHIP	10K	5%	1/10W
R824	1-216-077-00	METAL CHIP	15K	5%	1/10W
R825	1-216-121-00	METAL CHIP	1M	5%	1/10W
R826	1-216-121-00	METAL CHIP	1M	5%	1/10W
R827-830					
	1-216-134-00	METAL CHIP	2.2	5%	1/8W
R853	1-216-049-11	METAL GLAZE	1K	5%	1/10W
R854	1-249-385-11	CARBON	2.2	5%	1/4W
R855	1-249-385-11	CARBON	2.2	5%	1/4W
**********					
		KEY BOARD			
		*********			
		< CAPACITOR >			
C701	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C702	1-164-232-11	CERAMIC CHIP	0.01uF		50V
		< CONNECTOR >			
CNP701	1-764-423-11	PIN, CONNECTOR 12P			
		< DIODE >			
D702	8-719-977-00	DIODE DTZ5.1C			
		< IC >			
IC701	8-759-246-16	IC TC9240F			

KEY MAIN

Ref.No.	Part No.	Description	Remark
		< LIQUID CRYSTAL DISPLAY >	
LCD701	1-810-772-21	DISPLAY PANEL, LIQUID CRYSTAL	
		< SWITCH >	
LSW701	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (FM)	
LSW702	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (SEEK-/AMS⏮)	
LSW703	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (SEEK+/AMS⏭)	
LSW704	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (PRESET-/◀◀)	
LSW705	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (PRESET+/▶▶)	
LSW707	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (⏏)	
LSW708	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (TAPE◀❙▶)	
LSW710	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (AF/TA)	
LSW711	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (MW/LW)	
LSW712	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (4)	
LSW713	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (1)	
LSW714	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (5/ATA)	
LSW716	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (6)	
LSW717	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (3)	
LSW719	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (2)	
LSW721	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (+)	
LSW722	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (SEL)	
LSW723	1-762-141-11	SWITCH, KEY BOARD (WITH LED) (-)	
		< PILOT LAMP >	
PL701	1-517-165-21	LAMP, PILOT (BACK LIGHT) (GREEN)	
PL702	1-517-165-21	LAMP, PILOT (BACK LIGHT) (GREEN)	
		< RESISTOR >	
R701	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R702	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R703	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R704	1-216-190-00	METAL GLAZE 470 5% 1/8W	
R705	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R706	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R707-709	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R712	1-216-186-00	METAL GLAZE 330 5% 1/8W	
R714	1-216-186-00	METAL GLAZE 330 5% 1/8W	
R716	1-216-186-00	METAL GLAZE 330 5% 1/8W	
R718	1-216-186-00	METAL GLAZE 330 5% 1/8W	
R720	1-216-186-00	METAL GLAZE 330 5% 1/8W	
R722	1-216-186-00	METAL GLAZE 330 5% 1/8W	
R727	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R728	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R729	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R730	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R731	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R732	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R733	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R734	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R735	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R736	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R737	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R738	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R739	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R740	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R741	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R742	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R743	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R744	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R745	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R746	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R747	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R748	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
		< SWITCH >	
SW706	1-692-386-21	SWITCH (DSPL)	
SW715	1-692-386-21	SWITCH (SENS/BTM)	
SW718	1-692-386-21	SWITCH (OFF)	
SW720	1-692-386-21	SWITCH (MUTE)	
SW724	1-692-386-21	SWITCH (PTY/LOUD)	
**********			
*	A-3298-592-A	MAIN BOARD, COMPLETE (AEP,UK)	
*	A-3298-593-A	MAIN BOARD, COMPLETE (German)	
		**********	
		< CAPACITOR >	
C1	1-163-021-00	CERAMIC CHIP 0.01uF 5% 50V	
C2	1-163-021-00	CERAMIC CHIP 0.01uF 5% 50V	
C3	1-163-235-11	CERAMIC CHIP 22PF 5% 50V	
C4	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C5-7	1-124-584-00	ELECT 100uF 20% 10V	
C8	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C9	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	
C10	1-124-907-00	ELECT 10uF 20% 50V	
C11	1-136-169-00	FILM 0.22uF 5% 50V	
C12	1-136-165-00	FILM 0.1uF 5% 50V	
C13	1-130-479-00	MYLAR 0.0047uF 5% 50V	
C14	1-110-351-11	MYLAR 0.001uF 5% 50V	
C15	1-124-584-00	ELECT 100uF 20% 10V	
C16	1-136-159-00	FILM 0.033uF 5% 50V	
C17	1-130-475-00	MYLAR 0.0022uF 5% 50V	

MAIN

Ref. No.	Part No.	Description			Remark
C18-21	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C22	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C23	1-126-157-11	ELECT	10uF	20%	16V
C24	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C25	1-163-104-00	CERAMIC CHIP	30PF	5%	50V
C26	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C27	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C28	1-126-157-11	ELECT	10uF	20%	16V
C29	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C30	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C31	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C32	1-126-301-11	ELECT	1uF	20%	50V
C33	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C34	1-163-077-00	CERAMIC CHIP	0.1uF		50V
C35	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C46-49	1-163-021-00	CERAMIC CHIP	0.01uF	5%	50V
C101	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C102	1-126-301-11	ELECT	1uF	20%	50V
C103	1-124-257-00	ELECT	2.2uF	20%	50V
C106	1-126-157-11	ELECT	10uF	20%	16V
C107	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C108	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C109	1-126-157-11	ELECT	10uF	20%	16V
C110	1-163-014-00	CERAMIC CHIP	0.0027uF	10%	50V
C111	1-126-157-11	ELECT	10uF	20%	16V
C112	1-137-140-11	FILM	0.22uF	5%	50V
C113	1-124-907-00	ELECT	10uF	20%	50V
C114	1-124-907-00	ELECT	10uF	20%	50V
C125	1-124-257-00	ELECT	2.2uF	20%	50V
C151	1-124-463-00	ELECT	0.1uF	20%	50V
C152	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C153	1-124-463-00	ELECT	0.1uF	20%	50V
C154	1-164-346-11	CERAMIC CHIP	1uF		16V
C155	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C156	1-124-234-00	ELECT	22uF	20%	16V
C157	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C158	1-124-584-00	ELECT	100uF	20%	10V
C201	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C202	1-126-301-11	ELECT	1uF	20%	50V
C203	1-124-257-00	ELECT	2.2uF	20%	50V
C206	1-124-234-00	ELECT	22uF	20%	16V
C207	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C208	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C209	1-126-157-11	ELECT	10uF	20%	16V
C210	1-163-014-00	CERAMIC CHIP	0.0027uF	10%	50V
C211	1-126-157-11	ELECT	10uF	20%	16V
C212	1-137-140-11	FILM	0.22uF	5%	50V
C213	1-126-157-11	ELECT	10uF	20%	16V
C214	1-126-157-11	ELECT	10uF	20%	16V

Ref. No.	Part No.	Description			Remark
C225	1-124-257-00	ELECT	2.2uF	20%	50V
C301	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C302	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C303	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C304	1-124-584-00	ELECT	100uF	20%	10V
C305	1-124-234-00	ELECT	22uF	20%	16V
C306	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C307	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C308	1-124-907-00	ELECT	10uF	20%	50V
C310	1-124-464-11	ELECT	0.22uF	20%	50V
C311	1-124-257-00	ELECT	2.2uF	20%	50V
C362	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C363	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C364	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C365	1-126-157-11	ELECT	10uF	20%	16V
C366	1-124-234-00	ELECT	22uF	20%	16V
C367	1-126-103-11	ELECT	470uF	20%	16V
C401	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C402	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C403	1-124-234-00	ELECT	22uF	20%	16V
C404	1-126-157-11	ELECT	10uF	20%	16V
C405	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C411	1-124-257-00	ELECT	2.2uF	20%	50V
C501	1-124-584-00	ELECT	100uF	20%	10V
C502	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C503	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C504	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C505	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C506	1-163-017-11	CERAMIC CHIP	4700PF		50V
C507	1-124-257-00	ELECT	2.2uF	20%	50V
C508	1-124-589-11	ELECT	47uF	20%	16V
C509	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C601	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C602	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C603	1-125-705-11	CAP, DOUBLE LAYERS	0.22F		
C604	1-124-584-00	ELECT	100uF	20%	10V
C605	1-124-907-00	ELECT	10uF	20%	50V
C606	1-124-234-00	ELECT	22uF	20%	16V
C607	1-128-195-11	ELECT	39uF	20%	25V
C608	1-126-803-11	ELECT	47uF	20%	10V
C609	1-126-803-11	ELECT	47uF	20%	10V
C610	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C611	1-124-234-00	ELECT	22uF	20%	16V
C613	1-126-163-11	ELECT	4.7uF	20%	50V
C650	1-163-021-00	CERAMIC CHIP	0.01uF	5%	50V
C651	1-163-021-00	CERAMIC CHIP	0.01uF	5%	50V
C655	1-124-472-11	ELECT	470uF		10V
C656	1-124-584-00	ELECT	100uF	20%	10V
C660	1-164-346-11	CERAMIC CHIP	1uF		50V

MAIN

Ref.No.	Part No.	Description	Remark
C901	1-163-031-11	CERAMIC CHIP 0.01uF	50V
		< CONNECTOR >	
CN351	1-766-260-11	CONNECTOR, FFC/FPC (ZIF) 7P	
* CN352	1-506-995-11	PIN, CONNECTOR (PC BOARD) 13P	
CN602	1-764-422-11	PLUG, CONNECTOR 12P	
		< CONNECTOR >	
CNP803	1-580-277-11	PIN, CONNECTOR 16P	
		< COMPOSITION CIRCUIT BLOCK >	
CP1	1-519-504-11	GAP, DISCHARGE	
		< DIODE >	
D2	8-719-040-04	DIODE MA721WK-(TX)	
D3	8-719-034-63	DIODE MA4091-H (QZ)	
D350	8-719-800-76	DIODE 1SS226	
D361	8-719-034-63	DIODE MA4091-H (QZ)	
D362	8-719-800-76	DIODE 1SS226	
D501	8-719-109-71	DIODE RD3.9ES-B1	
D502	8-719-109-71	DIODE RD3.9ES-B1	
D503-506	8-719-800-76	DIODE 1SS226	
D601	8-719-110-31	DIODE RD12ES-B2	
D604	8-719-109-93	DIODE RD6.2ES-B2	
D605	8-719-109-89	DIODE RD5.6ES-B2	
D606	8-719-110-03	DIODE RD7.5ES-B2	
D607	8-719-914-43	DIODE DAN202K-T-147	
D608-615	8-719-977-17	DIODE DTZ7.5C	
D617-620	8-719-977-17	DIODE DTZ7.5C	
D621	8-719-991-33	DIODE DTZ3.9A	
D622	8-719-977-17	DIODE DTZ7.5C	
D624	8-719-923-80	DIODE MTZ12BC	
D660	8-719-978-45	DIODE DTZ9.1B	
D901	8-719-977-17	DIODE DTZ7.5C	
D902	8-719-977-17	DIODE DTZ7.5C	
D903	8-719-977-17	DIODE DTZ7.5C	
D904	8-719-977-17	DIODE DTZ7.5C	
		< IC >	
IC1	8-759-242-66	IC TC4W66F-TE12L	
IC2	8-759-823-81	IC LC7216M	
IC3	8-759-163-63	IC TDA7330BD-013TR	
IC151	8-759-331-71	IC NJM4558E (TE2)	
IC301	8-752-071-19	IC CXA1946Q	
IC350	8-759-988-33	IC BA3430FS	
IC360	8-759-823-87	IC LB1638M	
IC501	8-759-332-68	IC MN1884820S3N	
IC571	8-759-097-36	IC RH5VA40AA-T1C	
IC601	8-759-182-76	IC BA3910B-V3	
		< JACK >	
J1	1-764-808-11	JACK (ANT)	
J501	1-566-822-11	JACK (COMMANDOR)	
		< JUMPER RESISTOR >	
JC1	1-216-295-00	METEL CHIP 0 5% 1/10W	
JC2	1-216-295-00	METEL CHIP 0 5% 1/10W	
JC3	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC4	1-216-295-00	METEL CHIP 0 5% 1/10W	
JC5	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC6	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC7	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC8-13	1-216-295-00	METEL CHIP 0 5% 1/10W	
JC14	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC15	1-216-295-00	METEL CHIP 0 5% 1/10W	
JC16-19	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC20	1-216-295-00	METEL CHIP 0 5% 1/10W	
JC21	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC22	1-216-295-00	METEL CHIP 0 5% 1/10W	
JC23	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC24	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC25-27	1-216-295-00	METEL CHIP 0 5% 1/10W	
JC28	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC30-33	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC36	1-216-295-00	METEL CHIP 0 5% 1/10W	
JC37	1-216-295-00	METEL CHIP 0 5% 1/10W	
JC38	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC39	1-216-295-00	METEL CHIP 0 5% 1/10W	
JC40	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC41	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC42	1-216-295-00	METEL CHIP 0 5% 1/10W	
JC43	1-216-296-00	METAL CHIP 0 5% 1/8W	
JC44-47	1-216-295-00	METEL CHIP 0 5% 1/10W	
JC48	1-216-296-00	METAL CHIP 0 5% 1/8W	
		< COIL >	
L4	1-410-971-11	INDUCTOR 10uH	
L501	1-410-971-11	INDUCTOR 10uH	

Ref. No.	Part No.	Description			Remark
		< TRANSISTOR >			
Q1	8-729-901-04	TRANSISTOR	DTA114EK		
Q2	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q3	8-729-021-94	FET	2SK1657-T1B		
Q4	8-729-900-53	TRANSISTOR	DTC114EK		
Q5	8-729-901-82	TRANSISTOR	2SC2412K		
Q101-103					
	8-729-027-53	TRANSISTOR	DTC124TK		
Q151	8-729-027-53	TRANSISTOR	DTC124TK		
Q201	8-729-027-53	TRANSISTOR	DTC124TK		
Q202	8-729-027-53	TRANSISTOR	DTC124TK		
Q203	8-729-027-53	TRANSISTOR	DTC124TK		
Q361	8-729-807-12	TRANSISTOR	2SC3073-Y		
Q362	8-729-901-04	TRANSISTOR	DTA114EK		
Q363	8-729-900-53	TRANSISTOR	DTC114EK		
Q364	8-729-106-60	TRANSISTOR	2SB1115A		
Q365	8-729-900-53	TRANSISTOR	DTC114EK		
Q501	8-729-901-04	TRANSISTOR	DTA114EK		
Q502	8-729-020-67	TRANSISTOR	XN1A312-TX		
Q503	8-729-901-82	TRANSISTOR	2SC2412K		
Q603	8-729-030-18	TRANSISTOR	2SD2525		
Q605	8-729-020-67	TRANSISTOR	XN1A312-TX		
Q606	8-729-901-04	TRANSISTOR	DTA114EK		
Q607	8-729-901-04	TRANSISTOR	DTA114EK		
Q608	8-729-020-67	TRANSISTOR	XN1A312-TX		
Q609	8-729-807-12	TRANSISTOR	2SC3073-Y		
Q610	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
		< RESISTOR >			
R1	1-216-037-00	METAL CHIP	330	5%	1/10W
R2	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R3	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R4	1-216-073-00	METAL CHIP	10K	5%	1/10W
R5	1-216-258-00	METAL CHIP	330K	5%	1/8W
R6	1-216-246-00	METAL CHIP	100K	5%	1/8W
R8	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R9	1-216-073-00	METAL CHIP	10K	5%	1/10W
R10	1-216-089-00	METAL CHIP	47K	5%	1/10W
R11	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R12	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R13	1-216-075-00	METAL CHIP	12K	5%	1/10W
R14	1-216-089-00	METAL CHIP	47K	5%	1/10W
R15	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R16	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R17	1-216-073-00	METAL CHIP	10K	5%	1/10W
R18	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R19	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R20	1-216-097-00	METAL CHIP	100K	5%	1/10W
R101	1-216-198-00	METAL GLAZE	1K	5%	1/8W (German)

Ref. No.	Part No.	Description			Remark
R101	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W (AEP, UK)
R102	1-216-089-00	METAL CHIP	47K	5%	1/10W (German)
R102	1-216-085-00	METAL GLAZE	33K	5%	1/10W (AEP, UK)
R108	1-216-077-00	METAL CHIP	15K	5%	1/10W
R109	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R110	1-216-033-00	METAL GLAZE	220	5%	1/10W
R111	1-216-089-00	METAL CHIP	47K	5%	1/10W
R112	1-216-033-00	METAL GLAZE	220	5%	1/10W
R113	1-216-089-00	METAL CHIP	47K	5%	1/10W
R124	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R125	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R126	1-216-083-00	METAL CHIP	27K	5%	1/10W
R127	1-216-069-00	METAL CHIP	15K	5%	1/10W
R151	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R152	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R153	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R154	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R201	1-216-049-00	METAL GLAZE	1K	5%	1/10W (German)
R201	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W (AEP, UK)
R202	1-216-089-00	METAL CHIP	47K	5%	1/10W (German)
R202	1-216-085-00	METAL CHIP	33K	5%	1/10W (AEP, UK)
R208	1-216-077-00	METAL CHIP	15K	5%	1/10W
R209	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R210	1-216-033-00	METAL GLAZE	220	5%	1/10W
R211	1-216-089-00	METAL CHIP	47K	5%	1/10W
R212	1-216-033-00	METAL GLAZE	220	5%	1/10W
R213	1-216-089-00	METAL CHIP	47K	5%	1/10W
R224	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R225	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R226	1-216-083-00	METAL CHIP	27K	5%	1/10W
R227	1-216-069-00	METAL CHIP	15K	5%	1/10W
R303	1-216-033-00	METAL CHIP	220	5%	1/10W
R304	1-216-077-00	METAL CHIP	15K	5%	1/10W
R305	1-216-109-00	METAL CHIP	330K	5%	1/10W
R308	1-216-029-00	METAL CHIP	150	5%	1/10W
R309	1-216-097-00	METAL CHIP	100K	5%	1/10W
R361	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R362	1-249-389-11	CARBON	4.7	5%	1/4W
R363	1-249-389-11	CARBON	4.7	5%	1/4W
R364	1-216-073-00	METAL CHIP	10K	5%	1/10W
R365	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R403	1-216-033-00	METAL CHIP	220	5%	1/10W
R404	1-216-109-00	METAL CHIP	330K	5%	1/10W
R405	1-216-077-00	METAL CHIP	15K	5%	1/10W
R406	1-216-081-00	METAL CHIP	22K	5%	1/10W
R407	1-216-081-00	METAL CHIP	22K	5%	1/10W
R501	1-216-198-00	METAL GLAZE	1K	5%	1/8W
R502-505					
	1-216-049-00	METAL GLAZE	1K	5%	1/10W

MAIN REEL SENSOR

Ref. No.	Part No.	Description			Remark
R506	1-216-109-00	METAL CHIP	330K	5%	1/10W
R507	1-249-417-11	CARBON	1K	5%	1/4W
R508	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R509	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R510	1-216-262-00	METAL GLAZE	470K	5%	1/8W
R511	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R512	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R513	1-216-198-00	METAL GLAZE	1K	5%	1/8W
R514	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R515	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R516	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R517	1-216-097-00	METAL CHIP	100K	5%	1/10W
R518	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R519	1-216-017-00	METAL CHIP	47	5%	1/10W
R520-522					
	1-216-097-00	METAL CHIP	100K	5%	1/10W
R524-531					
	1-216-097-00	METAL CHIP	100K	5%	1/10W
R534	1-216-097-00	METAL CHIP	100K	5%	1/10W
R536	1-216-097-00	METAL CHIP	100K	5%	1/10W
R539	1-216-097-00	METAL CHIP	100K	5%	1/10W
R546	1-216-262-00	METAL CHIP	470K	5%	1/8W
R547	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R605	1-216-186-00	METAL GLAZE	330	5%	1/8W
R606	1-216-097-00	METAL CHIP	100K	5%	1/10W
R607	1-216-073-00	METAL CHIP	10K	5%	1/10W
R608	1-216-073-00	METAL CHIP	10K	5%	1/10W
R609	1-216-073-00	METAL CHIP	10K	5%	1/10W
R610	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R611	1-216-113-00	METAL CHIP	470K	5%	1/10W
R612	1-216-105-00	METAL GLAZE	220K	5%	1/10W
R613	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R614	1-216-097-00	METAL CHIP	100K	5%	1/10W
R615	1-216-083-00	METAL CHIP	27K	5%	1/10W
R616	1-216-089-00	METAL CHIP	47K	5%	1/10W
R617	1-216-089-00	METAL CHIP	47K	5%	1/10W
R618	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R619	1-216-073-00	METAL CHIP	10K	5%	1/10W
R620-622					
	1-247-807-11	CARBON	100	5%	1/4W
R625	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R626	1-216-089-00	METAL CHIP	47K	5%	1/10W
R627	1-216-081-00	METAL CHIP	22K	5%	1/10W
R628	1-216-073-00	METAL CHIP	10K	5%	1/10W
R629	1-216-025-00	METAL GLAZE	100	5%	1/10W
R630	1-216-041-00	METAL GLAZE	470	5%	1/10W
R631	1-216-073-00	METAL CHIP	10K	5%	1/10W
R632	1-216-025-00	METAL GLAZE	100	5%	1/10W
R636	1-216-049-00	METAL CHIP	1K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R650	1-249-385-11	CARBON	2.2	5%	1/4W
R651	1-249-385-11	CARBON	2.2	5%	1/4W
R660	1-216-049-00	METAL CHIP	1K	5%	1/10W
R661	1-249-385-11	CARBON	2.2	5%	1/4W
R662	1-249-385-11	CARBON	2.2	5%	1/4W
R901	1-247-807-11	CARBON	100	5%	1/4W
		< VARIABLE RESISTOR >			
RV1	1-238-104-31	RES, ADJ, CARBON 220K (S METER)			
		< SWITCH >			
S501	1-571-478-11	SWITCH, SLIDE (POWER SEL)			
S601	1-692-431-21	SWITCH, TACTILE (REST)			
		< TUNER UNIT >			
TU1	A-3282-003-A	TUNER UNIT TUX-001A			
		< VIBRATOR >			
X1	1-577-126-51	VIBRATOR, CRYSTAL (7.2MHz)			
X2	1-760-556-11	VIBRATOR, CRYSTAL (4.332MHz)			
X501	1-579-952-21	VIBRATOR, CERAMIC (8MHz)			
X502	1-567-098-41	VIBRATOR, CRYSTAL (32.768kHz)			

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REEL SENSOR BOARD

****

< SWITCH >

S901	1-692-885-12	SWITCH, ROTARY SLIDE (TAPE OPERATION)			

****

MISCELLANEOUS

****

10	1-765-082-11	CORD (WITH CONNECTOR) (POWER, SPEAKER) (includind F901,902)			
130	1-765-460-12	CORD (WITH CONNECTOR)			
F901	1-533-326-11	FUSE (BLADE TYPE) (AUTO FUSE) (3A)			
F902	1-533-331-11	FUSE (BLADE TYPE) (AUTO FUSE) (15A)			
HP901	1-500-196-11	HEAD, MAGNETIC (PLAYBACK)			
M901	X-3368-684-1	MOTOR ASSY, MAIN			
M902	X-3368-685-1	MOTOR ASSY, SUB			
S901	1-692-885-11	SWITCH, ROTARY SLIDE			

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Ref. No.	Part No.	Description	Remark

ACCESSORIES & PACKING MATERIALS
****

3-798-673-11 MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, ITALIAN)
3-798-673-41 MANUAL, INSTRUCTION (SPANISH, DUTCH, SWEDISH, PORTUGUESE) (AEP, UK)
3-798-673-61 MANUAL, INSTRUCTION (DANISH, FINNISH) (AEP, UK)
3-798-674-11 MANUAL, INSTRUCTION, INSTALL (ENGLISH, FRENCH, GERMAN, ITALIAN)
3-798-674-41 MANUAL, INSTRUCTION, INSTALL (SPANISH, DUTCH, SWEDISH, PORTUGUESE) (AEP, UK)

3-798-674-61 MANUAL, INSTRUCTION, INSTALL (DANISH, FINNISH) (AEP, UK)
X-3369-665-1 CASE ASSY

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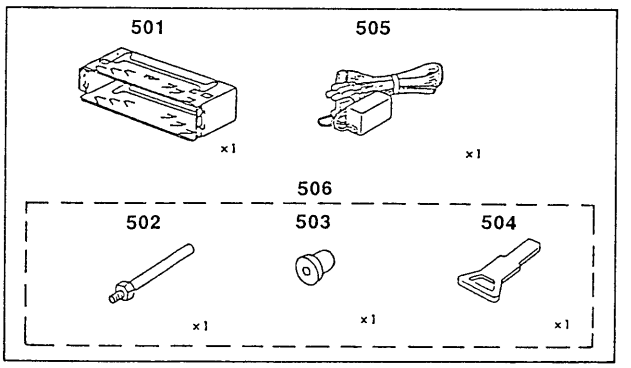
****
HARDWARE LIST
****

#1 7-621-772-10 SCREW +B 2×4
#2 7-621-773-87 SCREW +PTT 2.6×10 (S)
#3 7-621-770-67 SCREW +PTT 2.6×6 (S)
#4 7-685-106-19 SCREW +P 2×10 TYPE2 NON-SLIT
#5 7-627-553-17 PRECISION SCREW +P 2×2 TYPE 3

#6 7-628-253-05 SCREW +PS 2×4
#7 7-624-104-04 STOP RING 2.0, TYPE -E

****

MOUNTING HARDWARE



* 501 3-916-161-01 FRAME, FITTING
502 3-386-828-01 SCREW, FITTING
503 3-349-410-01 BUSHING
504 3-388-078-01 KEY
505 1-765-082-11 CORD (WITH CONNECTOR) (POWER, SPEAKER) (includind F901, 902)

506 X-3370-077-1 SCREW ASSY (KEY), FITTING

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